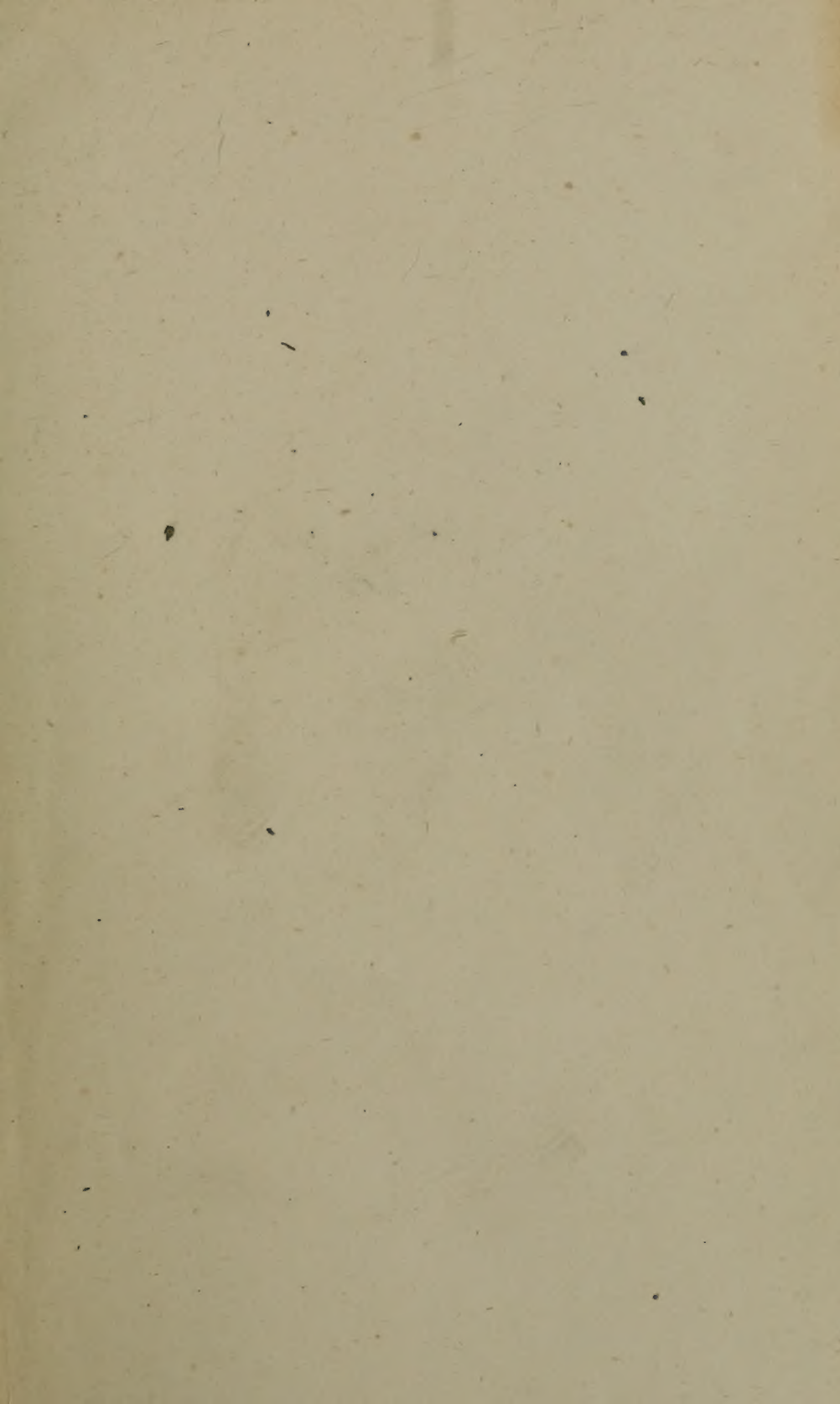


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THE ZOOLOGIST FOR 1866.

SECOND SERIES, pp. 1—528.

LONDON :

E. NEWMAN, PRINTER, 9, DEVONSHIRE STREET, BISHOPSGATE, N.E.

THE
ZOOLOGIST:
A
POPULAR MISCELLANY
OF
NATURAL HISTORY.

CONDUCTED BY
EDWARD NEWMAN, F.L.S., MEMB. IMP. L.-C. ACAD.

SECOND SERIES.—VOLUME THE FIRST.

(OR TWENTY-FOURTH FROM THE COMMENCEMENT.)



LONDON:
JOHN VAN VOORST, PATERNOSTER ROW.

M.DCCC.LXVI.

"A generous nature that lay stupefied and oppressed under the combination of adverse circumstances, begins to awake and imbibe a charm from prospects of beauty and glory. This awaking genius gazes with rapture at the beautiful and elevating scenes of Nature. The beauties of Nature are familiar to it and charm it like a mother's bosom; and the objects, which have the plain marks of immense power and grandeur, raise in it a still, an inquisitive, a trembling delight. But this genius often throws, over the objects of its meditations, colours even finer than those of Nature herself, and opens a Paradise that exists only in its own creations."

USHER.

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THE ZOOLOGIST

FOR

1866.

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

November 6, 1865.—F. P. PASCOE, Esq., President, in the Chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—
'Philichthys Xiphiæ, *Stp.*, monographisk fremstillet af V. Bergsøe;' presented by the Author. 'Nye Oplysninger om Philichthys Xiphiæ, *Stp.*, af J. Steenstrup;' by the Author. 'Synopsis of the Bombycidæ of the United States,' by A. S. Packard, jun.; by the Author. 'Materials for a Monograph of the North-American Orthoptera,' by Samuel H. Scudder; by the Author. 'Reports on the noxious, beneficial and other Insects of the State of New York,' by Asa Fitch, M.D., Reports 3—9, 1859-65; by the Author. 'The British Hemiptera,' Vol. i. (Hemiptera-Heteroptera),' by J. W. Douglas and J. Scott; by J. W. Dunning. 'Memoires pour servir à l'Histoire Naturelle du Mexique, des Antilles, et des Etats-unis,' IVe Livraison (Orthoptères, Blattides); by the Author, Mons. H. de Saussure. 'Blattarum novarum Species aliquot, conscripsit H. de Saussure'; by the Author. 'The Zoologist' for November; by the Editor. 'The Entomologist,' No. 21; by the Editor.

The addition, by purchase, of the 129th livr. of Duval, Fairmaire et Migneaux, 'Genera des Coléoptères d'Europe,' was also announced.

Election of Members.

Samuel McCaul, Esq., B.C.L., of the Rectory House, London Bridge; and Henry Reeks, Esq., of the Manor House, Thruxton, were severally ballotted for, and elected Members.

Exhibitions, &c.

Professor Westwood, on behalf of Mr. S. Stone, exhibited a specimen of *Acherontia Atropos* which had been born with only one antenna, the right-hand organ being entirely wanting; also the pupa-skin from which the moth had emerged, and which showed a rudimentary antenna, which, however, was not placed in its normal position along the side of the thorax, but projected out from the body and was then curved or thrown backwards, like the horn of a cow or ram.

Mr. F. Smith had a new locality to mention for *Acherontia Atropos*; a living specimen of the moth had been that day caught in the Reading Room at the British Museum.

Mr. Dunning mentioned the capture of a specimen of *Chærocampa Celerio* on the 29th of September last, at Brantingham, near Brough, Yorkshire. It was taken in the net, shortly after 6 p. m., whilst hovering over a bed of *Geraniums*. The captor was Mr. R. C. Kingston, the gentleman whose previous capture in 1846 of the same species in the same locality, but on the flower of *Physianthus albicans*, was recorded in the 'Zoologist' (Zool. 1863). Mr. Kingston described the flowers of the *Physianthus* as forming an excellent insect-trap; they were very sweet and attractive, and on the slightest touch to the stamens by the proboscis of an insect entering the nectary, the stamens and anthers closed firmly round and held the insect fast; he had seen the plant with dozens of insects upon it, amongst which *Plusia Gamma* was generally most abundant. Mr. Kingston also mentioned the abundance at Brantingham (as elsewhere during the present season) of *Macroglossa Stellatarum*, and of the larvæ of *Acherontia Atropos*; and on the 30th of September he had taken specimens of *Cerastis spadicea* on ivy-bloom.

Mr. M'Lachlan exhibited a female specimen of *Sterrhæa sacraria* captured near Worthing on the 19th of August last, and six specimens which had been reared by the Rev. J. Hellins from eggs laid by the aforesaid female on that day. Seven eggs were deposited, but one was crushed during transmission to Mr. Hellins; the remaining six all hatched on the 29th of August, the larvæ were fed on *Polygonum aviculare*, spun up between the 19th and 23rd of September, and were all in pupa by the 30th. The first moth, a female, emerged on the 15th of October, two more females on the 17th, a fourth female on the 19th, a male on the 25th, and lastly another male on the 28th of October. A full description of the egg, larva and pupa had been published by Mr. Hellins (Ent. Mo. Mag. ii. 134), and a coloured drawing by Mr. Buckler of several varieties of the larva was exhibited. Of the six moths thus bred not one was like its mother or bore any great resemblance to what has hitherto been considered to be the normal *Sterrhæa sacraria*; they differed also considerably from one another. Both the males had the upper wings suffused with an exquisite rosy tint, and the under wings, instead of being pure white, were clouded with fuscous; one female had the upper wings variegated with yellow and rose-colour, and the under wings yellowish; the remaining three females had the upper wings of a delicate buff, the oblique transverse stripe being blackish, and the cilia in one instance buff, in the others rosy, whilst the under wings were yellowish white. Any of these specimens, if caught at large, might very pardonably have been described as a new species; and the amount of variation to which it now appeared that *Sterrhæa sacraria* was liable seemed to throw doubt upon the specific distinctness of the several continental forms which had been described as species allied to *S. sacraria*. In reply to enquiries, Mr. M'Lachlan stated that *Polygonum aviculare* was not previously known to be the natural food-plant, but had been given to the larvæ experimentally and was eaten with avidity. M. Carl Plotz had figured the larva on a species of Chamomile, but as the moth occurred in all parts it must either feed on some plant of very wide distribution or more probably was polyphagous.

Mr. Bond exhibited four specimens of *Acidalia manconiata*, *Knaggs*, and for comparison therewith, a series of its nearest allies, *A. subsericeata* and *A. straminata*; also

a coloured drawing, by Mr. Buckler, of the larva, which, as well as the imago, differed from those of the other species mentioned. This new insect had been both captured and bred at Manchester and Sheffield; in this case also the larvæ fed on *Polygonum aviculare*, a plant which appeared to be very generally acceptable to the larvæ of *Geometræ*.

Mr. Bond also exhibited a number of admirable photographs, by Dr. Maddox, of microscopic objects, *e. g.*, the leaf insect of the sycamore, the *Acarus* of the fig, parasites of the field-mouse, the mole, the sparrow, the chaffinch, &c.

Mr. M'Lachlan exhibited a partially andromorphous female of the dragon-fly, *Calepteryx splendens*; the left anterior wing was in colour precisely like that of a male, but retained the female form of wing; the right anterior wing had only blotches or dashes of the dark male colouring on the dorsal portion of the wing; the specimen was captured in France by M. Fallou, of Paris. De Selys Longchamps mentioned the capture, in Prussia, by Dr. Hagen, of a female *C. splendens* the wings of which were entirely coloured as in the male.

Mr. Janson exhibited *Myrmedonia plicata*, *Erich.*, a species new to Britain: a dozen specimens had been captured at Bournemouth in August last, by Messrs. E. A. and Edgar Smith; they were found on an open heath, at the roots of grass, amongst which was a nest of the ant, *Tapinoma erraticum*. Mr. Janson remarked that the presence, in all the twelve specimens, of the curious conformation of the dorsal surface of the fourth and fifth abdominal segments rendered it probable that this structure was common to the two sexes, and was not peculiar to the male of *Myrmedonia*, as had hitherto been supposed.

Mr. G. R. Crotch exhibited *Ægialia rufa*, *Fabr.*, *Erich.*, a species new to Britain, of which several specimens were taken at Liverpool by Mr. F. Archer, but, with the exception of that exhibited, had been accidentally destroyed; also *Lithocharis castanea*, *Grav.*, *Erich.*, which is the *Medon Ruddii*, *Steph.*, whilst the species from the Isle of Wight which is in many of our collections appears to be the *L. maritima*, *Aubé* (Grenier, Cat. Col. Fr.); also *Monotoma 4-foveolata*, *Aubé*, of which three or four specimens were formerly taken by Mr. Janson in Hainault Forest, and which was readily distinguished from all the other species by its thoracic foveæ; this name was introduced into the British list by Mr. Waterhouse, but afterwards withdrawn, his insect proving to be *M. rufa*, *Redt.*

Mr. S. Stevens exhibited a box of insects of all orders, being a further portion of the collection made by Mr. Andersson in Damara-land. Amongst them were *Goliathus Layardi*, *Eurymorpha Mouffleti*, *F.* (*cyanipes*, *Hope*), an *Atractosomus*, &c.; and a new species of *Acræa* from the Victoria Falls, Zambesi.

Mr. S. Stevens also exhibited a number of oak-spangles, the work of *Cynips longipennis*, which had recently been found in profusion by Mr. Hewitson at Oatlands.

Mr. S. Stevens announced the death of Mr. P. Bouchard at Santa Martha, whither he had gone to collect; and read a letter from Mr. Plant, dated Tamatavi, September 2, 1865, in which the writer recounted some of his entomological experiences in Madagascar.

The President called attention to the account published in that morning's newspapers of the wreck of the "Duncan Dunbar" on the reef Las Roccas, in long. 33° 45' W., and lat. 3° 52' S., on the 7th of October. The vessel struck the reef at high water,

and became fixed upon the rock upon a small spot of which the passengers were landed. "On landing it was found that the little islet or bank of sand was covered with pig-weed, but there were no signs of water. . . . The island seemed quite covered with birds, which from their very wildness took no more notice of men or women than to move a few feet out of our way. The ground swarmed with a large species of earwig, and was in many places honeycombed by the holes of land-crabs." He was curious to know what pig-weed was, and whether the so-called earwigs were really *Forficulæ*: the reef was probably a recently-raised coral reef, and it would be very interesting to learn what were the first insect-forms which effected a settlement upon the newly-formed island.

The President read the following :—

Note on Calamobius and Hippopsis.—When M. James Thomson, in his 'Essai, &c.,' referred *Stenidea* to *Blabinotus*, he was immediately followed by Schaum, Grenier and de Marseul in their respective Catalogues. I directly called attention to that mistake, and it is now admitted. In his more recently published 'Systema Cerambycidarum,' M. Thomson refers *Calamobius* (*Guérin*) to *Hippopsis* (*Serville*), and in this I am surprised to see that he has been followed by M. Léon Fairmaire in the 'Genera des Coléoptères.' The two genera agree, it is true, in their slender habit, but they are perfectly distinct, and do not belong even to the same sub-family. *Calamobius* has 12-jointed antennæ, with antennary tubers non-approximate and nearly obsolete, small facets to the eyes, and small claw-joints; *Hippopsis* has 11-jointed antennæ, with well-developed tubers contiguous at the base and nearly erect, coarsely granulated eyes, and large claw-joints, as long as the three other joints of the tarsus taken together, whilst in *Calamobius* they scarcely form more than one-third of its length—a structure indicating different habits of life."

Mr. Hewitson communicated the following note :—

"It is interesting and worthy of notice that, in the second part of the Annals of the Entomological Society of France for this year, there is a figure of a variety of *Chrysophanus virgaureæ* from Zermatt, upwards of 5000 feet high in the Swiss Alps, which has a row of pale blue spots on the posterior wing, exactly resembling specimens of *Chrysophanus Phlœas* which we have lately received from the northern highlands of India. This variety of *C. Phlœas* is figured in Cramer, pl. 186, under the name of *Timeus*."

The Secretary announced the receipt of a communication from Mr. G. J. Bowles, Sec. Ent. Soc. of Canada, Quebec Branch, dated September 1, 1865, "On the occurrence of *Pieris Rapæ* in Canada." The principal part of it was an almost *verbatim* copy of a paper originally published in 'The Canadian Naturalist,' and thence transferred to the 'Zoologist' for 1864 (Zool. 9371). The following was new matter :—

"The species is rapidly extending the limits of its habitat. It is already common on both banks of the St. Lawrence for one hundred miles below Quebec; and this summer I saw two specimens in the cabinet of a gentleman in Montreal, captured this season in that city. It is still rare, however, in that locality. In the vicinity of Quebec the species was exceedingly abundant in 1863 and 1864, flying by hundreds over the fields and gardens, and was numerous even in the most crowded parts of the city. This year, however, it has not been quite so abundant, probably owing to

the continued rains of August and September, 1864, which must have destroyed myriads of the larvæ, and the cold and backward spring of this year. Early in March, 1864, the butterflies began to appear in houses, produced from pupæ which had been suspended on the walls during the previous autumn. On the 6th of April—a time when the ground is still covered with snow, and the only Lepidoptera to be seen are a very few hybernating individuals of *Grapta Comma* or *Vanessa Antiopa*, lured from their winter retreats to enjoy the sunshine—several specimens were taken in the open air at Laval, about fifteen miles from Quebec. From that time the butterflies increased in number, and, continuing through the whole summer, might be seen even in October feebly fluttering over the gardens in the outskirts of the city. From the fact of there being no apparent diminution in their numbers during the season I infer that the insect is at least treble-brooded, or that there is a succession of broods, new individuals constantly emerging from the chrysalis to take the places of those that die off. The caterpillars reared by me last year passed through their stages very rapidly. When first taken, on the 8th of June, they were about a line long; on the 19th they pupated, and on the 26th of June the perfect insects appeared, making the whole period, almost from the egg to the perfect state, only eighteen days." In confirmation of his previous observation, that "living winter pupæ brought into the warm house from the cold outside invariably shrivelled and died in a few days," the author added, "I have not yet succeeded in procuring a butterfly from a chrysalis gathered on a winter day. It is thus evident that, although the species is increasing in numbers and spreading rapidly over a large extent of country, it is not yet fully acclimated."

Papers read.

The Secretary read a communication from Captain J. Mitchell, Superintendent of the Government Museum, Madras, entitled "Remarks on Captain Hutton's Paper on the Reversion and Restoration of the Silkworm" (published in the 'Transactions' for 1864). The author disputed the statement, that, in the formation of silk, the two fibres which emerge from the two small orifices in the lip are twisted together by certain hook-like processes in the mouth, and insisted that the two filaments are laid side by side in the cocoon, without twisting, and adhere together until separated by the solution of the gum in the process of manufacture. It was also pointed out that the Tussah silk, from *Antheræa Paphia*, is flat, and not cylindrical, each filament consisting of a large number of very fine fibres which are extremely difficult to separate; the finest fibres which the author had obtained from this compound filament measured about the 35-thousandth part of an inch in diameter. The filaments spun by *Attacus Atlas* and *Actias Selene* also appeared to be compound.

Mr. Hewitson communicated "Descriptions of New Hesperidæ," consisting of eighteen species of *Pyrrhopyga* and two of *Erycides*.

Mr. Baly read a paper entitled "New Genera and Species of *Gallerucidæ*," in which two new genera, *Syphaxia* and *Chorina*, and eleven species of *Cerotoma* (mostly from the Amazons) were described.

Mr. David Sharp communicated a paper "On the British species of *Agathidium*," enumerating eleven species, of which three new ones were described under the names of *A. clypeatum*, *A. convexum* and *A. Rhinoceras*.

The Rev. D. C. Timins communicated some "Notes on collecting European Lepidoptera." After an exhortation to British Diurnal-Lepidopterists not to confine

themselves to the narrow limits of their island, but to extend their range of study to the European forms, the author gave the results of his own collecting at Boulogne-sur-Mer, Pierrefonds in the Forest of Compiègne, in the neighbourhood of Paris, at Neufchâtel and Thun; and, finally, expressed his desire to supply information to students of European butterflies, either by indicating localities, recommending useful works, or furnishing specimens of species which he had met with in sufficient plenty.

New Part of 'Transactions.'

The 'Transactions of the Entomological Society,' Third Series, vol. v. Part 1, containing "Trichoptera Britannica; a Monograph of the British Species of Caddisflies," by Mr. R. M'Lachlan, and being the fifth Part published during 1865, was announced as ready for distribution.

Notice of Subjects for Discussion.

The President mentioned that the Council had been considering whether any and what steps were practicable in the way of giving notice beforehand of papers intended to be read or subjects introduced for discussion at the Meetings of the Society. If such notice could be given, members would come better prepared for the consideration of the question, and the interest and scientific value of the Meetings would be increased. A compulsory rule, that notice *must* be given, would stifle rather than promote discussion, if indeed it would not altogether exclude many subjects, which were, according to the present practice, incidentally discussed on the exhibition of some specimen or object of interest, and which exhibition it was that suggested and gave rise to the discussion. These incidental conversations, when confined within proper and reasonable limits, formed one of the most valuable and interesting features of the Meetings, and it was impossible to require previous notice of these, since Members themselves often might not know until the very day of Meeting whether they would be able to attend, or if so what insects they would have to exhibit. All that the Council could hope for, and what he had been desired by the Council to request, was that, in future, when any member intended to read a paper on or otherwise bring forward any subject of general interest at a particular Meeting, he would announce the subject at the previous Meeting, if possible, or subsequently at the earliest period to the Secretary, who would give such publicity or notice as under the circumstances might be practicable.

Erratum.—A typographical error occurs in the Report of the October meeting of the Entomological Society. At Zool. 9281, line 19 from bottom, for "May" read "many."—J. W. D.

Argynnis Lathonia in the Isle of Wight.—In the November number (Zool. 9817) I read that Dr. Wallace had seen a specimen of *Argynnis Lathonia* near Colchester but that he did not succeed in capturing it. I have been more fortunate, as I took a very fresh one in my garden on the 20th of October, and I have since heard that four others have been taken near Ventnor, after that date. These captures have a peculiar interest to us of this island, because in the list of Diurnal Lepidoptera, compiled by that accurate entomologist, Mr. A. G. More, and published by him in that best of all works on every subject of interest connected with the island, edited by the Rev. E.

Venables, of Bonchurch, this butterfly is one of five which had not, up to the date of publication, been found here, the other four being *Pieris Daplidice*, *Melitæa Athalia*, *Hesperia Comma* and *H. Paniscus*.—*W. M. Frost; Belle Vue, Sandown, Isle of Wight, November 25, 1865.*

Description of the Larva of Caradrina blanda.—Feeds on *Plantago major*, and is full fed by the 26th of May: it does not roll in a ring when disturbed: head porrected, narrower than the 2nd segment; body attenuated anteriorly, and this part frequently stretched out and moved after the manner of a leech: each segment has a transverse but irregular series of warts, and each wart emits a conspicuous hair, the dorsal hairs being directed backwards, the lateral hairs forwards. Colour of the head pale brown, with darker reticulations, slightly shining; of the body dingy brown, without gloss, the dorsal area paler and slightly reticulated: it is bordered on each side by a narrow and indistinct paler stripe: on each side below the spiracles, which are black, is an obscurely indicated broader pale stripe: ventral surface, legs and claspers dingy semitransparent brown. I am indebted to Mr. Doubleday for a supply of this larva.—*Edward Newman.*

How long will Carcinas mænas remain alive without Immersion?—I tried some time ago an experiment with some specimens of *Carcinas mænas*, as to how long they could remain alive without immersion. I had half-a-dozen put into a basket and kept out of doors; they were consequently exposed to several showers of rain, which might probably have prolonged their lives by keeping up a certain degree of humidity in their branchia; but whether it did so or not, three of them died on the third day, two gave up on the fifth day, and the last at the end of the seventh day. They were in consequence kept without food, and so may not have entirely died from non-immersion, but by actual starvation: could I have fed them in any way I think it most likely they might have been still alive, and so approach the land-crabs of the West Indies, the Cape of Good Hope, &c., in their habits.—*Edward Parfitt; Devon and Exeter Institute, Exeter, October 27, 1865.*

Rediscovery of Geophilus maritimus of Leach—I have much pleasure in making known the rediscovery of this long-lost species. Dr. Leach discovered it some fifty years ago, and from that time to this I am not aware of its having again been seen by any observer: there is no specimen or specimens in the British Museum collections, for I examined them with my friend Mr. Smith when in London in May last. When my friend Mr. Reading called on me since, I was working up the Devonshire species of this family, and I mentioned it to him; he said he had seen one under stones on a particular part of the shore at Plymouth, and when he went down there he went to the place again, and found four specimens, of which he gave me one, and it proved to be the identical lost species of Dr. Leach. Mr. Newport, when he published his Monograph of the Order, had never seen Leach's species, and consequently only published the doctor's description without any comments: it gives me then much pleasure to confirm that accurate observer Dr. Leach.—*Id.*

Description of Arthronomalus crassicornis, Parfitt.—Head elongate-ovate, smooth and shining to the naked eye, but, under an inch objective, finely, delicately and thickly punctate, with several irregular impressions; the basilar segment a little narrower than the subbasilar, having a deeply impressed quadrate space in each, the

beginning of two impressed lines running the whole length of the body. Antennæ approximate at the base, very stout, the joints obconic, shining pale luteous, with a ferruginous caste, obtuse, sparsely clothed with pale yellow pubescence, twice the length of the head, and tapering very gradually from the base upwards. Labium emarginate, with two black obtuse teeth, the colour of the teeth forming two lines coalescing at about the middle and continuing to the base. A strong ridge marks the line of junction of the labium and the base of the mandibles; at the apex of this ridge is a black spot on each side. Mandibles strongly curved, the apical half jet-black, the basal ferruginous-yellow, with three strong oblique folds: the mandibles and the labium very finely punctured, with a few coarser impressions. Body compressed, dark ferruginous, gradually tapering toward the tail. Legs pale yellow, with ferruginous claws; vary in number in both sexes, from forty-eight to fifty pairs; two impressed lines run the whole length of the body above, very distinct anteriorly, but growing somewhat indistinct posteriorly. Anal styles pale yellow, with a ferruginous cast, slender in the female, but stout in the male, compressed laterally, the three basal ones obconic, the apical one acute. Length of male $11\frac{1}{2}$ lines; of female $1\frac{1}{2}$ inch. This species appears to be a curious compound of two genera and species, namely, *Arthronomalus longicornis* of Newport and *Geophilus subterraneus* of Shaw, it having the elongated head of the former and the antennæ (only stouter) of the latter; it also has the anal styles very much like the former; the number of legs agrees very nearly with the former species. Mr. Newport says of his species, of which I have a specimen, "*Labia elongato medio inconspicuè sulcato lavi punctis raris.*;" but in mine it is thickly punctured. Mr. Newport also says, "This myriapod varies in having the cephalic segment and the antennæ a little shorter and less hairy than others." Even making allowance for this variation I cannot think it could reach such an extreme as is exhibited here in this species. When in London, in May last, I examined the British Museum Collection with my friend Mr. F. Smith, but could find nothing there like it. Found beneath the bark of an old elm near Exeter, in April, 1865.—*Edward Parfitt.*

Note on the Field Mouse (*Mus sylvaticus*).—We have heard so much lately about "cave men," that perhaps you will spare me a corner to say a few words about cave mice. Wandering through the woods here, a few days ago, I came upon a little cave or recess among the rocky precipices which border the southern bank of the Wharfe: the floor presented a singular spectacle, being thickly strewn with the wings of Noctuæ, belonging to hundreds of individuals. In one corner was a spider's web, from which large numbers of wings were suspended. At first I thought the moths had taken refuge in the cave, and suffered death at the hands of the owner of the web; but a closer inspection showed that this was not the explanation, as I could not find a single thorax or abdomen either on the floor or in the web, and the wings were invariably disunited, which would not have been the case had the moths voluntarily entered the cave and become entangled in the web. It was also improbable that so large a number of Noctuæ had sought one place of refuge, and several of the species of which I found remains were not likely to have so concealed themselves at all. How, then, came they into the cave? Not brought in by birds or bats, I think, or I should have found other traces of their presence, which I was unable to do. Mice only being left as the probable agents, I set a trap in the cave, and next morning found my suspicion confirmed

by the capture of a field mouse, so that it appears these little marauders had, in their own way, been re-enacting the part of Dr. Buckland's hyænas at Kirkdale,—dragging their prey from the woods, to be devoured in their den at leisure. I am not aware whether this habit of the field mouse has been observed: it was new to me. I made a careful examination of the wings, and found among them remains of the following twenty species:—*Xylophasia polyodon* (a few), *Charæas Graminis* (a few), *Luperina testacea* (a few), *Agrotis suffusa* and *A. Segetum* (abundantly), *Triphæna orbona* (abundantly), *Noctua glareosa* (abundantly), *N. festiva* and *N. xanthographa* (a few), *Orthosia macilenta* (in profusion), *Anchocelis rufina* and *A. litura* (several), *Cerastis Vaccinii* (abundantly), *Xanthia ferruginea* (abundantly), *Miselia Oxyacanthæ* (one only), *Agriopis aprilina* (abundantly), *Phlogophora meticulosa* (a few), *Hadena glauca* (one only), *Plusia Gamma* (in hundreds), *Amphipyra tragopogonis* (one only). I had sugared for several evenings in the immediate neighbourhood with very little success, *Miselia Oxyacanthæ*, *Anchocelis litura* and *Noctua glareosa* being my only visitors, and those very sparingly, and was glad to learn, even from a mouse, what was on the wing; for, alas for human vanity! the schemes of mice and men do not appear to be *equally* liable to come to naught. I found no remains of *Geometræ*: although *Scotosia dubitata* is not uncommon on the rocks around, and *Cidaria immanata* is abundant in the wood in which the cave is situated, both would probably be out of the reach of prowling mice. The wings found in the rocks were no doubt carried there by gusts of wind. The cave is about twelve or fourteen feet in depth, and is situated immediately under the ledge of rock known as the "Panorama Stone," one mile west of Ilkley, and about six hundred feet above the River Wharfe. I hope to look in occasionally upon these industrious little entomologists, and, by noticing how their collection progresses, perhaps learn something more of the Fauna of the district than I could find out for myself. There were many wings, no doubt, of species which appear earlier in the season, too much decayed to be identified with certainty. I have only named those about which there was no doubt. Wings of *Orthosia macilenta* formed fully one half the collection, and that insect must be extremely abundant in the wood, although I have not met with it during my stay here: its mode of life appears, in some way, specially to expose it to the attacks of mice. The number of moths which a colony of field mice will destroy during the summer must be something prodigious, and in winter I judge they are active pupa-diggers, as I found in the cave several emptied cocoons of *Eriogaster lanestris*. The only species of *Noctua* which I have met with here of which there were no remains in the cave is *Calocampa exoleta*; this species, however, is only just appearing, and will no doubt be found in the mouse's larder in due time.

—*Edwin Birchall; Ilkley, Wharfedale, October 7, 1865.*

Notes on the Quadrupeds of Lanarkshire.

By EDWARD R. ALSTON, Esq.

(Continued from page 9708).

Bank Vole.—I have much pleasure in recording what I believe to be an addition to the Fauna of Scotland, namely, the occurrence of the

bank vole (*Arvicola pratensis*, Baillon), of which a specimen was taken alive here on the 1st of August in one of the small areas already mentioned (Zool. 9706). When compared with an example of the common species (*A. agrestis*, Flem.), the specific characters are well marked; the ears are larger and more upright, the head narrower and less flattened, the eyes larger, and the tail much longer, being about one half the length of the body. The head and back are shaded with a rich chestnut, the flanks gray, the tail dark above and whitish beneath, while the under surface of the body and the feet are almost pure white. In all these particulars it agrees exactly with M. de Selys-Longchamps's detailed description, as quoted by Professor Bell ('British Quadrupeds,' p. 331). As my specimen is still alive I cannot give any exact measurements, but it is decidedly smaller than the common field vole. This vole was placed in a box with a glass front (the bottom being covered with a turf), in which it has now lived for nearly three months without becoming at all tame or familiar. It has made a "form" like a hare's, in which it sleeps during most of the day, coming out occasionally when tempted with fruit, but reserving most of its food for the hours of darkness. It will eat almost any vegetable substance, but appears to prefer roots and fruit to herbage, a raw potato being a special delicacy. Gooseberries are very neatly emptied by a small hole on one side, the skins of all fruit being rejected. It is so timid that it always tries to conceal itself when any one approaches, nor will it eat in presence of a human being, unless very hungry. A common field vole, which I kept for some time, seemed to be even more strictly nocturnal in its habits, and burrowed *beneath* the turf with which it was supplied instead of making a nest among the moss. It was also bolder than its rarer and much prettier relative.

Otter.—The otter is a very rare visitor to our small burns; a pair were killed here in May, 1859, the female being shot by one of my brothers in the act of killing a rabbit. On the upper part of the Clyde, however, they are plentiful, and boys who set night-lines for trout often find only the head and back-bone of the fish on their hooks, the flesh having been stripped off by the otters. The late Mr. Monteith, of Carstairs, had a tame otter, of which some account has been given by Mr. Macgillivray, and I have learned some further particulars as to its habits from one who was well acquainted with it. "Neptune" was allowed his full liberty, and spent much of his time in the river, but always returned to the gamekeeper, whom he would follow like a dog. He often lay basking in the sun, on a hay-rick near the mill on the

river, but he got into the bad graces of some of the farmers by killing their "collies" or sheep-dogs. The dogs came to the mill with their owners, and not being used to tame otters, they often attacked Neptune, who always defended himself with great spirit. On more than one occasion he was seen to seize one of his persecutors by the throat, plunge into the mill-dam, and hold the unfortunate colley under water until it was drowned. At last Neptune died, and one of the farmers whose dogs he had thus killed was more than suspected of having administered poison. My informant was not acquainted with Neptune's early history, but Mr. Macgillivray states that he was taken very young, and was suckled by a pointer bitch. Another tame otter was kept a few years ago by one of the Duke of Athol's keepers, at Dunkeld; she was called "Kitty," and used to answer to her name as well as any dog. Like Neptune she came to an untimely end, being caught accidentally in a trap, and so much injured that she had to be killed. Mr. Gunn observes (Zool. 9644) that otters sometimes carry on their depredations on land, "particularly in vegetable gardens." May I ask if he means that they eat the vegetables or roots? If so, it is surely a new and remarkable trait in the life-history of the animal, and further particulars would be most interesting. All the other Mustelidæ are, I believe, exclusively animal-feeders when in a state of nature.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, October 30, 1865.

Account of a Heronry, and Breeding-place of other Water-birds, in Southern India. By JOHN SHORTT, M.D., F.L.S.

(Read before the Linnean Society, November 3, 1864).

VADEN THAUGUL is a small village, fifty miles from Madras and twelve from Chingleput, in a south-easterly direction; here is a large tank covering an area of four acres and a half.

From the north-east to the centre of the bed of the tank there are some five hundred or six hundred trees of the *Barringtonia racemosa*, from ten to fifteen feet in height, with circular regular moderate-sized crowns; and when the tank fills, which it does during the monsoons, the tops only of the trees are just visible above the level of the water.

This place forms the breeding-resort of an immense number of water-fowl; herons, storks, cranes, ibises, water-crows or cormorants,

darters and paddy-birds, &c., make it their rendezvous on these occasions.

From about the middle of October to the middle of November small flocks of twenty or thirty of some of these birds are to be seen, coming from the north to settle here during the breeding-season. By the beginning of December they have all settled down; each tribe knows its appointed time, and arrives year after year, with the utmost regularity, within a fortnight, later or earlier, depending partly on the seasons. Some, from the lateness at which they arrive, appear to have come from great distances. They commence immediately by building their nests or repairing the old ones, preparatory to depositing their eggs. When they have fully settled down, the scene becomes one of great interest and animation.

During the day the majority are out feeding, and towards evening the various birds begin to arrive in parties of ten, fifteen, or more, and in a short time the trees are literally covered with bird-life; every part of the crown is hidden by its noisy occupants, who fight and struggle with each other for perches: each tree appears to be a moving mass of black, white and gray, the snowy white plumage of the egrets and curlews contrasting with and relieved by the glossy black of the water-crows and darters, and by the gray and black plumage of the storks.

The nests lie side by side, touching each other; those of the different species arranged in groups of five or six, or even as many as ten or twenty on each tree.

The nests are shallow, and vary in inside diameter from six to eight inches, according to the size of the bird.

The curlews do not build separate nests, but raise a large mound of twigs and sticks, shelved into terraces, as it were; and each terrace forms a separate nest: thus eight or ten run into each other. The storks sometimes adopt a similar plan.

The whole of the nests are built of twigs and sticks, interwoven to the height of eight to ten inches, with an outside diameter of eighteen to twenty-four inches; the inside is slightly hollowed out, in some more and in others less, and lined with grass; reeds and quantities of leaves are laid on the nests. In January the callow young are to be seen in the nests. During this time the parent birds are constantly moving on the wing, backwards and forwards, in search of food, now returning to their young with the spoil, and again, as soon as they have satisfied their cravings, going off in search of a further supply. About

the end of January or early in February the young are able to leave their nests and scramble into those of others. They begin to perch about the trees, and by the end of February or the beginning of March those that were hatched first are able to take wing and accompany their parents on preying expeditions; and a week or two later, in consequence of the drying up of the tanks in the vicinity, they begin to emigrate towards the north with their parents and friends, except perhaps a few whose young are not yet fledged, and who stay behind some time longer. Thus, in succession, the different birds leave the place, so that it is completely deserted by the middle of April, by which time the tank becomes dry; and the village cattle graze in its bed, or shelter themselves under the trees from the scorching heat of the mid-day sun, while the cow-boys find amusement in pulling down the deserted nests.

The village and tank are completely isolated from the public thoroughfare, and very few seem aware of its existence. The villagers hold an agreement, from the ancient Nabob's government, which continues in force by a renewal from the British Government, that no one is to shoot over the tank, which is strictly enforced to the present day; and the birds continue in undisturbed possession of this place as a favourite breeding-resort every winter or monsoon.

The natives understand the value of the dung of the birds in enriching their rice-fields; and when the tank becomes dry, the silt deposited in its bed is taken up to the depth of a foot, and spread over the rice-fields; consequently they are careful not to disturb the birds.

When I first discovered the locality, I was under the impression that the birds were venerated, from some superstitious motives, but an acquaintance with the villagers undeceived me as to this point. Anxious to examine the nests, I visited the locality at various periods when the tank was full of water, first in January, and subsequently on the 8th of March, 1864. I caused a raft of wood to be constructed for the occasion. On the last excursion I was accompanied by some of the European and native officials of the district; and we were pushed along on the raft by two fishermen swimming one on either side, their heads only visible above water, whilst the tank bund was lined with the villagers, who witnessed our operations with great curiosity. As we approached the trees the birds at first remained quite unconcerned, but as we got nearer they began to look on with amazement at a scene which was evidently new to them; then they rose

en masse over our heads, and uttering piercing cries, some, with threatening gestures, rested a moment on the adjoining trees, and then took to their wings again; although so crowded they performed their evolutions with the greatest nicety and dexterity, never interfering with each other's movements. Some ascended to a great height, and were hardly perceptible in the air, while others gyrated immediately above our heads; many crowded on adjoining trees, and witnessed our intrusion with dismay. On the first occasion, in January, 1864, I was alone on the raft; most of the young of the water-crows, storks, herons and darters were fully feathered, and were able to scramble to other nests, and some to the tops of trees; a few nests contained eggs, and others callow young. The water-crows and darters, young as they were, immediately took to the water and dived out of sight. On the second occasion, in March last, the young of the ibises were fully feathered, as were also a few gray and purple herons and darters; two or three nests only contained eggs, and some few callow young.

The following is a detailed account of the nests, and of the number of eggs, or young, I found in each nest on the different times I visited the place:—

1. The small Gray and Black Stork (*Leptoptilos javanica*?); Tamil name, "Nutha coottee narai," literally "Shell-fish- (*Ampullaria*) picking crane." These birds were the most numerous; their nests were two feet in diameter, and contained three eggs or young. The eggs were of a dirty white colour, of the same shape, but not quite so large, as those of the turkey. The young when fully feathered were in prime condition. The flesh is eaten by Mussulmans and Pariahs. I remember on one occasion, when one was shot in the jungles of Orissa, one of the sepoys, a Bengal Brahmin, begged for the dead bird, which was given him; and after eating it he came back to say he had enjoyed his dinner greatly: that he had made a hearty one was evidenced by his protuberant stomach. The bird is common about here, but keeps entirely to marshy fields, edges of tanks, &c; it never approaches towns. Some half dozen or more of these birds may often be seen in the morning, sunning themselves with outstretched wings in the dry fields. They only differ from the adjutant (*Leptoptilos Argola*) in size and colour. These nest early, and the young are firm on the wing in the month of February.

2. The Ibis or Curlew (*Ibis falcinellus*); Tamil, "Arroova mookan," literally "Sickle-nosed," which name they take from their long curved beaks. The nest of this bird contained from three to five

eggs, and I found from three to four young ones in each nest. The eggs resemble in shape and size a medium-sized hen's egg, but are of a dirty white colour. The birds are white, with black head, feet and neck, and have a long curved black bill. The head and neck are naked, and the tail-feathers of rather a rusty brown colour; the lower sides of the wings, from the axillæ to the extremities, are naked; and the skin in the old birds is of a deep scarlet colour; in the young this is absent, although the part is naked. The young are fully fledged in March, and take to the wing in April.

3. The Gray Heron (*Ardea cinerea*); Tamil, "Narai," sometimes "Pamboo narai," or "Snake crane;" has a similar nest built of twigs, containing sometimes two, sometimes three eggs. I only found two young in the nests; they are fledged from January to April, according to the time of depositing their eggs, which some do earlier than others. The eggs are of a light green colour; they are not so large in circumference as a large-sized hen's egg, but are longer, with the small end sharp.

4. The Purple Heron (*Ardea purpurea*); Tamil, "Cumbly narai," or "Blanket crane." Nest the same; deposits two or three eggs, of same size and colour as last; seems to rear only two young. The young are fully fledged in April.

5. *Ardea Nycticorax*; Tamil, "Wukka." Nests are built after the same fashion, but smaller in size, and contain five eggs; hatches four or five young; eggs the size of a bantam's, and of the same shape. The young are fledged in April.

6. The Cormorant (*Graculus pygmæus*); Tamil, "Neer cakai," or "Water-crow." Nest the same as the others, built of sticks; deposits three or four eggs, and rears three or four young, which are fledged and on the wing in January; eggs like those of a small-sized bantam, rather sharp-pointed at small end, with a slight greenish tinge.

7. The Large Cormorant (*Graculus siennensis*); Tamil, "Peroon neer cakai," or "Large water crow." Builds a very rude nest, chiefly formed of sticks; lays four eggs, and rears two, three or four young. The eggs are the size of a medium-sized domestic hen's, and have a slight greenish tinge; the young are fledged sometimes in January, sometimes in March, according to the time of their nesting. These birds, as well as *G. pygmæus*, are to be seen fishing in the tank itself; and the rapidity with which they find their prey, by diving, is wonderful.

8. The Darter (*Plotus melanogaster*); Tamil, "Pamboo Thalai

neer cakai," or, "Snake-headed water-crow." Nest same as last; three, sometimes four eggs of same size and colour; young fledged and on the wing, some in January, others not till April.

I succeeded in capturing young of all the birds described here, and sent them to the People's Park at Madras. I was in great hopes of sending a few of each to the Zoological Society's Gardens, Regent's Park, London, by Mr. Thompson, the head keeper, of whose intended visit to India in the "*Hydaspes*" the Secretary, Dr. Selater, obligingly apprised me, but unfortunately I lost the opportunity, which I greatly regret.

Returning to the subject of Vaden Thaugul, the villagers tell me that the pelican sometimes comes and breeds here, as also the black curlew. Occasionally different kinds of teal, widgeons, &c., are said to nest in the rushes that bound the inner surface of the tank bund. But although I visited this place frequently, I saw no other birds than those described here.

The Egrets (or *Herodias Garzetta*, *Bubulcus* and *intermedia*), were congregated in very large numbers, and roosted on the trees at night; but they do not nest, which seems singular. The natives had observed this, and I found it to be the case. Yet I believe, of all the birds that assemble here, these occur in the greatest number. *Ardea alba*, or *Herodius alba*, and *H. intermedia* are also found here; and the natives say that they breed, but I did not find any of their nests in the place during my visits to Vaden Thaugul.

Ornithological Notes from Shetland. By H. L. SAXBY, M.D.

(Continued from page 9591).

AUGUST, 1865.

Storm Petrel.—Fresh eggs of the storm petrel were found as late as the middle of the month, although at that time most of the young birds had long left their nests. On the 8th I saw what appeared to be an adult sitting upon the water at Bluemull Sound: the boatmen seemed to consider this an unusual sight, for these birds are seldom observed so near the land, although they are often abundant about forty miles from the coast.

Skua.—On the 12th skuas were still in the neighbourhood of Burrafirth.

Razorbill.—I am obliged to Mr. Blake-Knox for his reply (Zool. 9614) to my enquiries respecting the plumage of the razorbill. My uncertainty arose partly from having so very seldom met with the bird in winter, but mainly from the misstatements contained in the few ornithological works to which I was able to refer; some authors asserting that there is a distinct white line from the bill to the eye in winter, and others that there is merely a line of white dots at that season. The error is probably due to the very common practice of taking it for granted that specimens shot late in autumn or early in spring are in winter plumage.

Snipe.—Snipe are unusually scarce in the low grounds, this may, I think, be attributed to the dryness of the summer, for although abundance of rain has fallen lately, sufficient time has scarcely elapsed for the newly formed pools to become stocked with food.

Sky Lark.—Young sky larks are very abundant. When disturbed they often alight for awhile upon a large stone or a wall, and utter a short, irregular kind of song.

Brent Goose.—On the 12th (wind S.W.), a brent goose suddenly appeared in the peat-bogs near Haroldswick. It was shot at and wounded, but escaped.

House Sparrow.—Fresh eggs of the house sparrow were found by me on the 13th. Most of the young broods are fledged, and whole families roost in the garden, preferring the thick, bushy tops of the elders, which afford better concealment than the other trees. The first ten minutes are usually spent in squatting and fluttering noisily among the leaves, but when once settled for the night they are very unwilling to leave the retreat. The parents seem to occupy the outer branches during the whole of the night, and they always wait until the young ones are quiet before they themselves retire.

Cuckoo.—On the 17th (wind blowing strongly from S.E.) a boy killed a cuckoo with a stone, upon the beach, at Haroldswick. Although well feathered it was evidently a young bird of the year.

Twite.—On the 20th, my attention being attracted by the peculiar notes of a pair of twites, I searched among some tall shrubs, and found three newly-fledged young ones, and soon afterwards a nest and one addled egg near the top of an elder, about nine feet from the ground. The nest was very large and clumsily made, and altogether different in appearance from the neat little structures one finds in the walls or upon the hill-sides. Those in the latter situations usually have very little beneath the lining—sometimes nothing at all; but in this one

there was a mass, about three inches and a half in thickness, of coarse roots, and pieces of dried, brittle elder-twigs, entirely filling the fork of the branch. The outer portion of the nest itself was composed of coarse roots and stalks of plants, and next to this was a layer of very fine roots; then came a layer of curved, white ducks' feathers, and lastly a thick layer of wool intermixed with the hair of cows and horses. The straggling appearance of the nest was partly due to the very unusual addition of large quill-feathers about the upper edge, the longest measuring eight inches in length. The inside diameter of the nest was about three inches. Nearly a fortnight ago, a cottager's boy found a nest of six young twites, among the heather, in a slight hollow which the heavy showers of the previous night had partly filled with water. Seeing that the young birds were nearly dead, he carried them home, and, by the help of a warm fire and plenty of wool, succeeded so far in restoring four of them that they were very soon able to take food. Two days later, observing the parent birds still in the neighbourhood, he replaced the nest and its contents, the ground having now become dry, and almost immediately afterwards he saw them carrying food to the nestlings. Several days after that, fearing that the latter would be discovered by other boys, and thinking that they were sufficiently strong to do without their parents' care, he once more took them home and fed them as before, but, to his surprise, the old birds, probably attracted by their cries, very soon discovered them, and ever since that time they have been unwearied in their attention, coming through the open window without the smallest sign of fear, although the room is almost constantly occupied by the cottager and his family.

Golden Plover.—Golden plovers are still in very large flocks. They are now in excellent condition for the table. In the daytime they are very wild, but early in the morning and late in the evening, when they are upon the low grounds, it is comparatively easy to approach them. Newly arrived flocks, although tolerably familiar at first, soon become very wild; but it is with the home-bred birds that the sportsman experiences the greatest difficulty, and with them it is often necessary to resort to various devices in order to get within shot. The most usual of these are, keeping the gun out of sight, crawling upon "all fours," or walking up beside a pony. In some parts of the hills, which are frequently crossed by peat-women,—seldom by any men except those who carry guns,—I have occasionally resorted to the device of strapping a plaid round my waist, petticoat-fashion (peat-women dispense with crinoline on week-days), and by such means I

have been able to obtain several shots before the trick was discovered. Such deception is decidedly mean, but it is wonderful how soon a diet of salt-fish and bad potatoes will convert an ornithologist into a pot-hunter. Riders can nearly always approach a flock within thirty or forty yards before it will take alarm. Once while riding across a moor I could not resist the temptation of firing at a large flock which rose before me. Three birds fell, and I am resolved that they shall be the last I obtain in that manner, unless indeed some means can be devised which will ensure *their* fall only.

Gannet.—On the 27th (wind N.W.) I saw the only gannet which has appeared this season.

Redbreasted Merganser.—A young bird of this species was shot in a fresh-water loch on the 28th, four others about the same size and one adult being in company with it. The only feathers apparent among the down were those of the scapulars and tail, and a few upon the sides beneath the wings. The bill, although small, resembled that of an adult female in colour and form, and the serrations upon each edge of the upper mandible, about thirty in number, were sharp and horny to the feel; those upon the lower mandible were smaller, more numerous, and scarcely so hard. The colours of the down were also similar to those of an adult female; the legs and feet were large and strong; the wings were without feathers and extremely small, measuring only one inch and a half from the carpal joint to the tip. The old bird was evidently a female. The whole family dived instantly on being alarmed.

Wild Duck.—Young wild ducks are quite strong upon the wing, but they still keep together in families, and are seldom to be met with far distant from their breeding-grounds. I do not remember having seen wild ducks in salt water at this time of the year.

Turtle Dove.—On the evening of the 29th (wind N.), a turtle dove came flying northwards across the voe, and alighted abruptly in the garden. Every night it roosts among the sycamores, but I can never find it in the day-time. On taking wing it spreads the tail like a fan, the white tips of the feathers then becoming very conspicuous.

Merlin.—Merlins are now becoming more numerous, but they are chiefly young birds of the year. I shot one in the garden on the 30th.

Kestrel.—On the 24th a well-fledged young female kestrel was shot among some rocks near the shore, by Mr. Thomas Edmonston, jun. The tarsi were, as usual, feathered as far as their upper third, but

in addition, the outer side of each remaining two-thirds was also feathered, though more scantily, a peculiarity which I have never observed before, nor can I find it mentioned in any work on Ornithology.

Knot.—I saw the first knots on the morning of the 25th, after a strong N.W. wind. I shot several, and found that all of them had at least a slight tinge of chestnut upon the under parts. In some it was so deep as to be conspicuous at a considerable distance, and in those specimens in which it was deepest there was a very strong tinge of it upon the edge of many feathers of the upper surface.

HENRY L. SAXBY.

Baltasound, Shetland, August 31, 1865.

Ornithological Notes from Lanarkshire.

By EDWARD R. ALSTON, Esq.

(Continued from p. 9710.)

Water Ouzel.—In this neighbourhood these birds make a curious local migration, which is not noticed in any work to which I have access. Soon after the young birds can fly well the whole family leaves the sheltered glens in which they breed, and retire to the smaller burns of the moors and upland pastures. Here they remain until September or October, when they return to the lower valleys. I did not notice this fact in my former notes on the species (Zool. 9432), as I wished to confirm my former observations. This summer I only saw one or two stray dippers on the lower waters until quite lately. Is this habit observed in other places, or is it caused by some local plenty or scarcity of food? As Mr. C. Smith observes (Zool. 9795) the water ouzel is a very early breeder: even in these northern and backward regions the eggs are usually hatched by the end of April. The nest is usually built on a rock, often protected by some projecting ledge, and always artfully concealed. I know of one authentic instance of a pair of water ouzels building in a hole in a wall, which they could only reach by darting between the revolving spokes of a mill-wheel. In their first plumage the young birds want the dark chestnut belly of the adult; all the feathers of the under parts are dull white, tipped with gray, giving the bird a soiled appearance; the flanks are smoke gray; the under tail-coverts tinged with rufous. At the first moult (in autumn) the bird acquires the brown head and pure

white breast, but the belly is darker and more mixed with black than in the adult. A strongly marked specimen of this age is probably the type of the *Cinclus melanogaster* of some authors. Mr. Morris describes both the young and adult dipper as having the irides "pale brown with a black ring in the middle" (*Brit. Birds*, iii. p. 20), but I have looked in vain for this peculiarity. A full investigation of the charges, so often brought against the water ouzel, of feeding on the spawn of salmon and trout, will be found in Mr. F. Buckland's interesting book on "Fish-Hatching" (p. 54), where he shows that, so far from eating the eggs, it in fact protects them, by destroying vast numbers of the water insects and larvæ which prey upon the ova. He gives the result of the dissection of more than forty examples, examined by himself, Mr. Gould, and others, many of which were shot on the spawning-beds in various rivers. Of all these birds only *one* contained a single fish's egg, and that was a diseased one. A meeting of the Zoological Society in February, 1863, after considering these observations, "fully acquitted the water ouzel of the charges of eating fish-spawn," a verdict which ought to have stopped all further persecution of this interesting and neat little bird.

Cuckoo's Stomach.—Mr. Boulton's remarks on "The Villous Coating of a Cuckoo's Stomach" (*Zool.* 9782) seem to call for a re-investigation of this interesting subject. Might not the real nature of the hairs be easily ascertained by the use of the microscope? The two young cuckoos which I have before mentioned (*Zool.* 9282 and 9709) contained no remains of hairy larvæ, and their stomachs have no "villous" coating, although they were both fully grown, a fact which seems to be against the idea that these hairs are a natural growth. And yet, if they are of insect origin, it seems difficult to understand how they could become so regularly arranged and firmly attached to the mucous membrane as Mr. Boulton describes.

Fieldfare and Woodcock.—Fieldfares were not observed here this season until October 5th. A woodcock was seen on the 25th of the same month.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, November 6, 1865.

Ornithological Notes from Flamborough. By JOHN CORDEAUX, Esq.

October 16, 1865. There are few situations on the eastern coast more favourable for the observation of our autumnal migratories, on

their first arrival from the cold north to the more genial climate of Britain, than Flamborough Head. Projecting from the Yorkshire coast for many miles directly out into the sea, it offers a first resting-place to many of those thousands of weary wanderers which, at this season, arrive on our eastern shores. It was with the expectation of meeting with some of our well-known winter visitors on their arrival that, in company with a friend, I again visited the neighbourhood; and I now venture to give the results of our observations.

October 16, 3.30 P.M. Left our quarters at the Thornwick Hotel, and walked down to the north landing, and from thence to the extreme point of the headland, following the ins and outs of the coast-line, a distance of three miles. The only birds in the bay, called the "north landing-place," were herring gulls and kittiwakes, old and young birds of both species, the young kittiwakes showing distinctly the black tip to the tail, as well as the dark markings on the back of the head and on the lesser wing-coverts. Very few kittiwake gulls are now to be found, compared with the thousands frequenting the neighbourhood during the spring and summer. Rock pipits were everywhere numerous along the coast. From the rocks near the lighthouse five cormorants, disturbed by our conversation, dashed out seaward, almost brushing the tops of the waves in their rapid and awkward flight. The shades of evening were deepening as we left the point and turned our steps homeward. From a storm-twisted bush near the lighthouse a redbreast, the "messenger of calm decay," was pouring forth its sweet and lonely song, while overhead the bright scarlet and white rays from the highly polished reflectors were projected, like the spread of a gigantic fan, far into the gathering gloom. Various species of migratory birds have from time to time been picked up outside the lantern; attracted by the glare they fly like moths against the glass, and are killed: about the middle of October, last year, a woodcock dashed right through the glass, which is a quarter of an inch in thickness, and was picked up mutilated and dead from amongst the lamps.

October 17, wind S.S.W. A pouring rainy day. Observed large flocks of larks in the stubble-fields opposite our quarters, and a small party of fieldfares and redwings flying over. Walked down to the south landing-place, overlooking Bridlington Bay, disturbing a solitary wheatear from the upper clay cliff near the landing-place. We proceeded some distance along the coast, to the southern termination of the so-called "Danes' Dyke," and then turned up a little wild glen

forming a natural fosse to that wonderful defensive embankment which from this point runs completely across the promontory. The sides of this valley are clothed with gorse and tall herbaceous plants, venerable hawthorns and a long line of plantation, with an undergrowth of broom, gorse and bracken, affording an admirable shelter and retreat for many of our migratory birds on their first arrival, and it is said a famous place for woodcocks. We walked along the top of the embankment to the northern side of the headland, a distance of nearly three miles, observing on our way numerous flocks of redwings and fieldfares feeding in the old hawthorn-fences skirting the entrenchment; these venerable gnarled and moss-draped hedge-rows were quite scarlet with haws, and will long afford an ample feast to any flocks of *Merulidæ* arriving on the promontory. The embankment terminates on the extreme edge of the northern precipices, 330 feet above the sea. From this point we turned along the cliff towards Flamborough, and as we walked homewards watched the rock pigeons returning from the stubbles to their cotes in the sea-caves below.

October 18, wind S.E. A calm still morning, but as we perceive, by the "drum and cone" suspended from the signal-station, not destined to last. Went out in a boat in Bridlington Bay, with the intention of fishing, and at the same time looking after any birds we might come across; pulled away in the direction of the Point, and as near to the coast as possible, for the chance of a shot on the low reef of rocks, uncovered at low water, which skirt the base of the cliffs. An oystercatcher, the only one seen during our visit, was standing on the extremity of a line of low rocks, as yet barely uncovered by the water, its bright red bill and white under parts contrasting strongly with the dark sea-weed-covered rocks. Wild and difficult of approach as these birds are, it allowed us to get so near that a green cartridge rolled him over into the sea: it was in magnificent plumage and very fat. We next gave chase to a duck, which gave some trouble, as it constantly kept diving under the heavy seas near the shore: at last it took a long dive out to sea, and gave me the chance of a shot as it rose again on the summit of a swell, but dived again instantly as the shot lashed along the wave; when it rose again it was at a considerable distance, but the poor bird was evidently wounded: another shot and we succeeded in getting it. This duck was unlike any I have ever shot; its generic characters were those of the goldeneye, and I thought it might probably prove a young female of that species, although, on comparing it with stuffed specimens of female goldeneyes, it varied considerably

in plumage. I had then no good work of reference at hand to decide. On leaving Flamborough I left the duck at the residence of Mr. Bailey, bird-preserver, but without any particular orders respecting it. Mr. Bailey was from home at the time, not returning for some days; he has since written to inform me that he was unable to make out the species, and that he regretted very much the duck had been destroyed. On consulting Yarrell and other authorities I find the duck almost perfectly described as the female harlequin (*Anas histriónica*). I will briefly describe it, and leave the readers of the 'Zoologist' to judge if I am correct in so calling it. Length about fourteen inches; wings short and pointed; two first primaries the longest, the first slightly exceeding the second. Bill bluish black; feet and legs the same colour as the bill, but with the webs much darker; irides brownish orange. The whole of the upper parts sooty brown, approaching to black; neck and breast mottled with two shades of brown; a spot on the forehead, also before and behind the eye, whitish gray; under parts white.

Two scoters, probably velvet, as they showed the white speculum in flight, next took our attention, but were far too wary to allow us to get within range. There were several redthroated divers in the bay, and one which, from its large size and appearance, must have been *Colymbus glacialis*. This bird led us a long chase, constantly diving, coming up again an immense distance a-head. A stern chase is proverbially a long chase, and so it proved in this instance, for the bird, by its wonderful diving powers, rapidly increased its distance, and forced us at last reluctantly to abandon the pursuit. The redthroated divers permitted a much nearer approach, never allowing us, however, to get within shot; just when a few more pulls would have brought them within range they would most provokingly rise and fly rapidly out to sea, neck and head stretched out, the back and tail forming the segment of a circle, their wings rapidly moving, and thus scuttle along scarcely raised above the waves. Observed flocks of ducks near the centre of the bay, but too far away to identify the species. A skua passed in chase of a kittiwake, and cormorants were continually passing and repassing us.

When about two miles to the right of the Head, and near the entrance of the Bay, we anchored the boat, and prepared the lines for fishing. I was surprised to see at this distance from the land, a lark singing high overhead, blithe and merry as when poised over an inland meadow. A "red admiral" butterfly passed flying towards the coast,

and a single tern flew over, but far too high to identify. While at anchor in this position I noticed out to seaward several dark objects approaching, evidently birds; on a nearer approach they turned out a party of hooded crows: slowly and wearily they flew in a long straggling body; we watched them till lost behind the line of cliff. From the direction they came, nearly due east, the nearest land would be the coast of Holland, 230 miles distant. It is quite possible, however, they may have been driven far to the southward by the great storm from the north, which was at that time raging at sea along the north-eastern coast.

Up to this time (3 o'clock P.M.) I never remember a more lovely day for this season of the year. It was pleasantly warm, and the perfect stillness was ominous, unbroken save by the lap of the water against our boat, or the far-off cry of some diver; but the calm was delusive, and the weather rapidly changed. The wind suddenly chopped round into the north, and soon a heavy sea was breaking across the reef off the Head, the long lead-coloured swells rolling into the bay, ridge beyond ridge, as yet smoothly rounded and unbroken. The north-eastern horizon was shut in by a lurid haze, from which long torn and ragged streaks of purple and gray vapour streamed upwards over half the heavens. We were tolerably fortunate with our fishing-lines, taking three or four species of fish, my companion capturing a fine shad, its stomach containing a crab, several shrimps and a handful of mussels, about an inch in length and unbroken. We were shown, when at Flamborough, by Mr. Duke, of the Thornwick Hotel, a pair of brass-mounted spectacles, perfectly entire and in good condition, which were lately taken out of the stomach of a large cod-fish caught off the coast. Cormorants have occasionally been captured in the bay, by taking the bait on the fishing-lines: our boatman, Robert Crofton, of Flamborough, stated that he once captured two in one day, at a time when he had five fathoms, or thirty feet of line out. As the wind was rapidly rising, we pulled for the coast, throwing overboard the remains of our bait and the inside of the fish. Although no gulls were in sight at the time, yet in a few minutes we had numbers of them round the boat to pick up the floating offal: the vision of these birds must be wonderfully keen and far-sighted, for I noticed common, herring gulls and kittiwakes, coming from an immense distance, several of the latter flying across from the opposite side of the headland, probably attracted by perceiving an unusual assembly of their allies.

October 19. A furious gale from the north, driving before it, horizontally across the headland, perfect sheets of rain. At the north landing-place the scene was magnificent, as the mighty resistless waves came rolling in, line beyond line, white-crested to the very horizon, while clouds of wool-like masses of foam were driven far up the sides of the rugged cliffs, and, again caught and carried upwards by the wind, drifting far inward across the promontory like gigantic snow-flakes. In the midst of all this turmoil several noble herring gulls were hovering steadily over the bay, eagerly scanning the broken water for any fragments of floating matter, their wings perfectly motionless, and retaining their position seemingly with but little effort. We had a rough walk of seven miles along the cliffs, and it was often with the greatest difficulty that we kept on our legs. In crossing the little valley which leads down to Thornwick Bay, I put up from a patch of rushes close to the shore a shorteared owl, which went sailing up the valley with a buoyant gull-like flight. During our walk we found numbers of fieldfares and redwings crouched under shelter of the turf-wall, which is here carried along the edge of the rocks: these birds seemed incapable of facing the hurricane, which swept and howled over the lofty Speeton Cliffs as if determined to level everything before it: they would permit us to get within a very short distance before rising, and then flutter forward under the walls. Woe to them if they rose ever so little above the friendly shelter, for the wind whirled them away literally like so many dead leaves. Even the rock pigeons, strong as they are on the wing, were often baffled in getting down to their sea cotes below: as they came in from the surrounding country they would fly low, often almost skimming the ground, and taking the shelter-side of any hedge-row in their line of flight to the coast. The sheltered line of the Dane's Dyke plantations was a much-frequented route. After clearing the edge of the cliffs, they nearly closed their wings and went down head foremost for hundreds of feet, like a cricket-ball falling, till level with the cave, when they would dash suddenly in. Often when rising to the summit, the wind would catch them, and they went drifting about across the face of the great limestone-wall, looking exactly like fragments of sea-weed, torn off by the wind, and frequently driven over the top, utterly unable to stem the force of the storm. We saw but few other birds during our walk, and only one cormorant, which was flying rapidly right in the very teeth of the gale, and at the height of about 500 feet above the sea. On our return I nearly succeeded in capturing two pipits, so utterly confused

and knocked about by the wind as to be scarcely able to struggle out of our path.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
October 30, 1865.

*Ornithological Notes from the East Coast of Yorkshire during the
Summer of 1865.* By W. W. BOULTON, Esq.

Ruff.—A specimen was shot by Mr. Kemp, of Skerne, near Driffeld, on the River Hull, on the 10th of April. It was at the time in company with another of the same species, which escaped. The bird was sent for preservation to Mr. R. Richardson, of Beverley, at whose house I saw it in the flesh.

Shoveller.—On the 14th of April a pair of these ducks, male and female, were shot by Mr. Holt, jun., farmer, of Brigham, near Beverley, on the West-beck, a tributary of the River Hull. They appeared unusually tame, when disturbed only flying about fifty yards before again alighting. These ducks are at all seasons of the year rare visitants in this locality, and generally occurring at wide intervals of time in midwinter.

Ring Ouzel.—This species occurs very sparingly in the neighbourhood of Beverley, a few stragglers being seen occasionally in the company of fieldfares, both on their arrival and departure. On the 25th of April three of these birds were seen by Mr. F. Boyes, of Beverley, near to the town: he succeeded in securing one of them, which I saw in the flesh.

Common Shieldrake.—On the 1st of May a mature female of this species was trapped by Matthew Armstrong, of Beverley, on Sunk Island, River Humber. This beautiful duck breeds each year at Spurn and in the neighbourhood.

Stock Dove.—A flock of these birds frequented the Carrs around Beverley during the late winter and early spring of the present year. Mr. W. Holmes, farmer, of Arram, near Beverley, shot four of them whilst concealed in a ditch of one of the fields generally frequented by them: he tells me that they were very shy and wary. Other specimens were subsequently shot and came under my observation; so that I could have no doubt as to the species, which is uncommon in this neighbourhood.

Wryneck.—A most perfect female specimen of the wryneck was sent to me by Mr. M. Bailey, of Flamborough, about the middle of May. It had been caught in a garden at Flamborough, by a neighbour of Mr. Bailey's, on the 13th of May: the bird was in the flesh when sent to me. The wryneck is decidedly rare in this portion of East Yorkshire. I have only met with four or five specimens during the past five years, and I hear of most of the rare birds shot in this division of the county.

Stone Curlew.—This fine plover still breeds on some of the wilder and least-cultivated lands of East Yorkshire. On the 28th of July a beautiful immature specimen of the thickknee was sent for preservation to R. Richardson, of Beverley: he showed it to me in the flesh, and I have since had it presented to me, most kindly, by Mr. T. Riley, of South Dalton, near Beverley. The bird had been shot near Holme, on Spalding Moor, the same locality from whence I obtained a fine mature female specimen on the 4th of June, 1864, and duly recorded in the 'Zoologist' (Zool. 9282). This immature specimen had doubtless been bred where it was shot, for several mature birds were seen but could not be approached within gun-range; moreover, several eggs of the stone curlew were found on this "moor." Mr. Riley possesses four eggs, found there this year, one of which he has kindly promised me.

Variety of the Starling.—On the 1st of August a curious variety of the common starling was brought to me by a boy, who had knocked it down. It was an immature bird of a nearly uniform rusty, or chestnut-brown colour throughout.

Richardson's Skua.—On the 15th of August Mr. M. Bailey, of Flamborough, sent me three specimens of this species, in various stages of plumage: on the 21st of August another, and on the 23rd of August four more of the same species. The group illustrated every change of plumage, from the first feathers to maturity. Mr. Bailey informed me that this skua had been very abundant off Flamborough during the present year up to that date, *viz.* the 23rd of August.

Buffon's Skua.—Mr. M. Bailey, of Flamborough, also sent me a male specimen of Buffon's skua on the 23rd of August. It would be in the second year's plumage, the various measurements agreeing with those given by Yarrell.

Zebra or Grass Parroquet.—Mr. Bailey also sent me one of these exquisite little birds, which had been shot in a wild state near to Flamborough, on the 19th of August of the present year. It was

doubtless an escaped specimen; but, judging from the lovely emerald-green and general lively tints of its plumage, the bird must have been at large for a considerable time. It was a male, and the stomach contained some half-digested seeds, but in such a state of trituration as to render them impossible of identification.

Variety of the Hedgesparrow.—A cream-coloured variety of the common “dunnoch” was sent to me by Mr. Kemp, of Skerne. It had been shot by himself on the 20th of August near to Skerne, the same locality from whence he obtained for me two very similar specimens during the two preceding years.

Greenshank.—A very fine male of this species was shot on the River Hull by Mr. Kemp, on the 26th of August. It was sent to me in the flesh, and is the second example only I have met with in this neighbourhood.

Rosecoloured Pastor.—I obtained a splendid mature male of this rare bird, in the flesh, on the 30th of August of the present year. It had been shot on the 26th on Cottingham Common, about five miles from Beverley, by Robert Duncum, farmer and publican, of the village of Cottingham.

Spotted Crake.—Several of these birds, in various stages of maturity, have been shot on the River Hull during the summer of 1865. The first I saw were shot on the 30th of August, by Mr. F. Boyes, of Beverley, and Mr. T. Buckley. Numbers have been seen by Mr. Boyes, who frequently beats the sedgy margins of our River Hull, but they are so difficult to “flush” that few are brought to bay.

Water Rail.—Mr. F. Boyes has also shot several of these birds, which, although comparatively plentiful on the River Hull, appear to be becoming less abundant in many other districts.

Arctic and Lesser Tern.—Mr. Joseph Owen, of Beverley, shot several of the arctic tern and also of the lesser tern, at Spurn, during the months of July and August. He also sent me a basket of their eggs, which had been gathered at Spurn, mixed up with those of the ringed plover.

Black Tern.—Was seen by Mr. M. Bailey, on the 16th of August. Mr. Bailey informs me that on that day he saw a pair of the black tern, off Flamborough, but he failed in endeavouring to secure them for me.

Great Shearwater.—A most perfect specimen of this bird, so very rare on the east coast of Yorkshire, was sent to me in the flesh by Mr.

Bailey. It had been shot off that coast on the 13th of September, and was in the uniform dark plumage of immaturity. It was a male, and has been added to my collection.

Sandwich Tern.—No less than three of these birds, one mature and two birds of the year, had been reported to me up to the 21st of September, as having been shot off Bridlington Quay, by Mr. T. Jones, of that town.

Shag.—An immature female of this species was sent me, in the flesh, on the 23rd of September, by Mr. Bailey. It had been shot on the same day at Flamborough Head. This is the only specimen I have seen of the shag occurring on our portion of the Yorkshire coast; the cormorant is, on the other hand, frequently met with.

Little Gull.—Mr. Bailey sent me, a very fine specimen, in the flesh, of this gull that had been shot off Flamborough, on the 16th of August. It proved to be a female in the plumage of the second year.

Roughlegged Buzzard.—I received a beautiful specimen of this fine buzzard the other day, which had been shot by John Clubley, keeper, at Spurn, on the 24th of October. Dissection proved it to be a young male.

W. W. BOULTON.

Beverley, November 7, 1865.

Osprey at Rostherne Mere.—About the end of April, a large bird was seen hovering over Rostherne Mere, a sheet of water a mile in length, and about two miles distant in a direct line from here, by the fisherman who was engaged in capturing pike. The peculiar habits of the bird, as well as its size, attracted the man's attention, and he found in it not only a rival but a very skilful piscator, who each morning, after performing many gyrations, suddenly plunged into the water and rose with a fish in his talons, and flew with it to a solitary tree on the margin of the mere to break his fast. This was related to a keeper, who laid in ambush for it the next morning, and shot it in the act of making its repast off a bream weighing two pounds. This rare, and I believe unique, visitor in this locality, was brought to me a few hours afterwards, and proved to be an adult osprey, in very fine and perfect plumage, and it now adorns my collection. Expanse of wings from tip to tip 5 feet 6 inches.—*Hugh Harrison; Bowdon, Cheshire, December 11, 1865.*

Jerfalcon at Crosby Ravensworth.—In February a fine specimen of the jerfalcon was shot, in the act of devouring a grouse, at Crosby Ravensworth, near Appleby, Westmoreland. I made application for it, and found it had already been placed in the collection of Sir George Musgrave, of Eden Hall.—*Id.*

Jerfalcons near Biddulph.—In my absence on a trip to Appleby, in the middle of October, my friend Mr. R. S. Edleston, his wife and son, saw two large white hawks

about a mile from here, sporting with a flock of starlings (redwings?), and on my return, the day after, he named this to me, and suggested jersfalcons. I was incredulous, and said sparrowhawks or kestrels, but his belief was firm; and my incredulity was much shaken some ten days after, on reading a paragraph in the 'Manchester Courier,' which stated that a fine jersfalcons was shot a few days ago on a farm near Biddulph, Cheshire (eighteen miles from here). I have, therefore, great reason for believing that my friend had the good fortune to see a couple of those rare and beautiful birds.—*Hugh Harrison.*

Merlin at Erdington.—On the 11th of November a fine merlin (*Fulco æsalon*) was taken alive at Erdington, in the net of a bird-catcher.—*S. Jephcott, jun.; Ballsall Heath, Birmingham.*

Curious Capture of a Kestrel by a Cat.—A curious fact occurred here last week. A cat belonging to a neighbour was lying concealed in a drain in a meadow, watching her opportunity to seize a field mouse, when a kestrel swooped upon a mouse so close to her that with a sudden spring she caught the bird, and eventually killed it, a termination to her hunt as unlooked for by her as it was unexpected by the kestrel, who had probably been so intent upon the moving mouse as to overlook the motionless cat. This was related to me by the owner of the cat, who took the bird from her a few minutes after the event.—*J. Edmund Harting; Kingsbury, Middlesex, November, 1865.*

Roughlegged Buzzard in South Yorkshire.—From the 'Doncaster Gazette' of the 10th of November I quote the following:—"A splendid female specimen of the roughlegged buzzard (*Buteo lagopus*) was shot a few days ago by Mr. W. M. Darley, of Thorne, at Woagill, near Middlesmore. It measured 4 feet 2 inches in the expansion of the wings, and 2 feet 1 inch from the beak to the tip of the tail."—*H. Ecroyd Smith; Aldbro' House, Egrement, Birkenhead.*

Great Gray Shrike near Rochdale.—I have recently seen a very fine and perfect specimen of the great gray shrike, in the hands of Mr. Harrop, the taxidermist, Manchester, shot near Rochdale last month, and it is now in the collection of my friend Mr. Richard Gorton.—*Hugh Harrison.*

Third Occurrence of the Redbreasted Flycatcher in Cornwall.—I have much pleasure in recording, in the 'Zoologist,' a third example of this little flycatcher, which was obtained this week from the Scilly Isles, after having been carefully observed and its predatory habits watched by Mr. Augustus Pechell and the Rev. John Jenkinson, who were on a visit to their friend the Lord Proprietor of the Isles. The specimen is very much like the first specimen which was obtained, and which I have in my museum, with the exception that the secondaries and wing-coverts are rather more deeply bordered with rufous, which I think indicates a bird of the year, as I observe in specimens of the adult birds the upper plumage is quite plain. The present specimen was observed in a tree, flitting about and darting after flies, much in the same way as our common species, returning to the same branch after each capture. The gizzard, on dissection, contained a mass of little black flies. I regret I cannot pronounce on the sex of the bird, as the mutilation from shot prevented the discovery. It appears now probable that the accidental occurrence of this little warbler is inclined to give way to denizenship, and I cannot help thinking that the species breeds in our islands. The bird uttered a note much louder than the suppressed "cheet" of the spotted flycatcher, and resembled the "chat" of the Saxicolæ; its supposed alliance to this genus is

strengthened by its note, and its large eye is also much like the expression of the stonechat.—*Edward Hearle Rodd ; Penzance, November 9, 1865.*

On the Whinchat nesting in Grass Meadows.—Mr. W. Jesse (Zool. 9790) enquires if the above occurrence is not rather unusual. Now, Morris ('British Birds,' vol. iv. p. 58) says of the nest of this bird, "Where there are no gorse-bushes, it is placed in the rough grass in a pasture field, or in a meadow." And I have myself twice seen its nest mown over in a grass-field at Willesden Green, viz. on June 25, 1863, when the nest contained six fresh eggs; and then again in almost the same place in the same field on June 20, 1864.—*Charles B. Wharton ; Willesden, Middlesex, November 3, 1865.*

Richard's Pipit in Ceylon.—This bird is so uncommon throughout the world that I feel justified in recording a specimen which came into my possession indirectly, from Ceylon. The Rev. G. Swift, of Beverley, kindly presented to me several skins of birds that had been sent to his father by a friend in Ceylon. Amongst these was a fine specimen of Richard's pipit, which I have had carefully mounted and added to my collection.—*W. W. Boulton ; Beverley, November 7, 1865.*

Black Sparrow.—Yesterday (October 28, 1865), while out walking, I saw a sparrow (*Fringilla domestica*) quite black; the bill and legs were of a light orange colour. I never saw a sparrow of this colour before, except once, and that was in Ireland.—*E. E. Knox ; Yorktown, Hants.*

Late Nesting of the Sparrow.—A heavy pair of sheers were erected here last week for the purpose of dismounting a large gun; as soon as they were up some sparrows took possession of the tackle of the head, and, notwithstanding that it was constantly in motion and forty men working at it, they stuck to it manfully. On taking down the sheers on Tuesday last I was surprised to find a nest finished, fixed between the rope and one of the spars. This is very late in the year for nesting, and is a curious instance of the boldness of the ever-impertinent sparrow.—*V. Legge ; South Shoebury, November 9, 1865.*

White Starling.—A perfectly white variety of the starling (*Sturnus vulgaris*) was shot near here, in the island of Foulness, on the 31st of July last. It is in the possession of a bird-stuffer here, and, judging from its small size, it is most probably a female. It would seem that such varieties of *Sturnus vulgaris* are often met with in this neighbourhood, as Morris mentions two that were shot in the island of Sheppy.—*Id.*

Cornish Chough at East Looe.—A Cornish chough was shot here last Friday, being the only one I have seen in this part of the county for upwards of twenty-five years, although I have been told they have bred in the cliffs near Polperro for three consecutive years. I have gone on purpose to look for them, but have never succeeded in seeing any. The bird shot was a bird of this year.—*Stephen Clogg ; East Looe, Cornwall, November 2, 1865.*

Raven Nesting in a Cucumber-frame.—Last spring a man named William Fowler, residing at Willingdon, near this place, had a raven which built a nest in a cucumber-frame, where, I believe, it is to be seen at the present moment. It was a very large nest, nearly as big as two faggots. Many persons went to see it. In the summer the raven flew away, but came back, sat on Fowler's shoulder, buffeted him and knocked his cap off; after that it again flew away to the downs, and has never returned.—*John Dutton ; Eastbourne, November, 1865.*

Martins in December.—On the 8th of December I saw a martin at Millandreath, near Looe; on passing the same place on the 10th I observed three hawking about: I sat on my horse for a quarter of an hour or more watching them; they appeared tolerably strong on the wing. The following day I went again to see if they were there, but could not see them: I supposed they had left or died during the night, which was cold and frosty, but having occasion to pass that way on the following day, to my great surprise, there were five near the same spot, very strong on the wing, and apparently enjoying the bright sunshine: they were more shy than on the former day, so that they did not long stay for my observation, but speedily took flight over the adjacent hill. On the 13th I had a specimen brought to me which was shot at Millandreath, which I sent you the following day for your inspection; and I also heard from reliable authority that three were seen in Looe on the 14th, being the latest that I have ever heard of being seen in England by many days. A farmer who was working near Millandreath informed me that on the Thursday or Friday of last week he saw a flight of some scores, about a quarter of a mile up the valley from Millandreath, which is a beach of about half a mile in length.—*Stephen Clogg; Looe, December 16, 1865.*

[The martin kindly sent me by Mr. Clogg was in very good condition, but the crop and intestines were entirely empty: I examined them thoroughly, with the view of ascertaining on what these birds could feed so late in the year. In the winter of 1863-4 I happened to be at Hastings at this time of the year, and daily saw martins on the wing.—*Edward Newman.*]

White Martin.—A pure white martin was seen here last week, but fortunately escaped without being shot.—*Id.; November 2, 1865.*

Stomach of the Cuckoo.—I have just read with surprise the strange announcement of your indefatigable correspondent, Dr. Boulton, on the hairy structures found in the stomach of a cuckoo. At once the idea struck me that these hairs were merely adventitious, and in all probability the hairs of the "tiger moth," which Dr. Boulton also noticed in the stomach. To entomologists it is a well-known fact that the hairs from the larvæ of many Lepidoptera have considerable penetrating power, and in the case recorded by Dr. Boulton I would suggest that the apparently fixed structures were merely such hairs partly embedded in the lining membrane of the stomach. To my cost have I often experienced the great pain resulting from the penetration of such hairs into my fingers during my collecting days; and once, I recollect, my late brother had incautiously handled some larvæ of the "fox moth" (*Bombyx Rubi*), and in afterwards rubbing his face a very troublesome sore, near the eye, was the consequence. I would suggest to Dr. Boulton a careful examination of the two sets of hairs with the microscope.—*George Norman; Hull, October 11, 1865.*

Moorhens perching in Trees and feeding on Pears.—Mr. Armistead (Zool. 9540) expresses surprise at seeing a moorhen perch in a tree: this is not at all unusual here, especially when the bird is flushed by a dog as described. I have on two or three occasions observed moorhens in trees, fifteen or twenty feet from the ground, feeding on the berries of the hawthorn or ivy, and very recently I saw, in a gentleman's garden near here, more than twenty moorhens in some large old standard pear trees on the borders of a piece of water they inhabited. The birds were very tame, and were perched about at different heights, busily engaged in devouring the pears, which (although it was in November) had not yet been gathered. I was told that the birds

had been feeding in this manner every day for some weeks.—*James Shorto; Dorchester, December 9, 1865.*

Discovery of a Moa's Egg at the Kai Koras.—There is at the present time being exhibited at Messrs. Bethune and Hunter's stores, for the benefit of the curious, an object of no less interest than the egg of a moa, another relic of the *rara avis* of New Zealand. The egg is of itself an object of no common interest to ordinary people, but it must be still more so to those who watch narrowly the development of natural history in its relations to this colony, and the circumstances connected with the finding are calculated to lend a still greater, not to say a romantic, interest to it. It appears, from what we learn from Captain Davidson, of the schooner "Ruby," which trades between this port and the Kai Koras, that a man in Mr. Fyffe's employment at the latter place was digging the foundation of a house, and when on the side of a small mound he suddenly came upon the egg in question, and the skeleton of a man, supposed, of course, to be a Maori. The body had evidently been buried in a sitting posture, and the egg must have been placed in the hands, as when found the arms were extended in such a manner as to bring it immediately opposite the mouth of the deceased. This, it is assumed, was in accordance with the Maori custom, and was done for the purpose of giving the individual who was buried an opportunity of sustaining himself if he required sustenance. Between the legs of the skeleton were found numerous tools, cut from green stone, including a spear, axe, and several implements, which would lead to the belief that the man to whom the bones belonged must have been, in some way or other, connected with the wood trade—that is to say, if carpenters, cabinet-makers, &c., flourished in his time. All the bones were in excellent preservation, one arm and hand being entirely without blemish. The skull bore evidence of the proprietor having, at some time or the other, received some hard knocks, probably in the battle-field while taking his part in some of those terrific encounters which are supposed to have taken place in ancient times. Unfortunately, before the man who was digging discovered the natural treasure, the implement he was using came in contact with the shell and broke a small piece out of the side of it, but the fragments have been carefully preserved, and might readily be fitted into the aperture. The egg itself is about ten inches in length and seven inches in breadth, the shell being of a dirty brownish colour, and rather better than the thickness of a shilling coin. The inside is perfectly clear and free from all traces of decayed matter. From what Captain Davidson tells us, we should suppose that the ground where this relic was discovered must have been used as a cemetery at some distant period of the past, as Mr. Fyffe had previously found some interesting Maori emblems about the same place, but none of the natives about there—and some of them we are informed have arrived at very mature ages—have the slightest recollection of even having heard, as a matter of history, that any of their ancestors had found a final resting-place in that particular locality.—*Wellington Paper.* [This egg was sold by Mr. J. C. Stevens on the 24th of November for £120.—*E. Newman*].

Occurrence of the Stone Curlew or Great Plover at the Land's End.—It is singular but quite true that this species has never, to my knowledge, occurred in Cornwall in the summer season: at that time the bird is entirely unknown to us, being neither heard nor seen, although year after year specimens are procured in the depth of winter. I had a specimen, in high condition, sent in from the Land's End yesterday. The migratorial movement of this species is no doubt similar to other species that come

north in the breeding season, retiring again in the autumn and towards winter to the southern countries of Europe and the north of Africa. The only way to account for the regular hyemal visits of the great plover to this district is that the extreme southern latitude of the British Isles, which may be included between the Lizard Point and the Land's End, is the exact *northern* boundary of the space occupied by the species in its winter quarters.—*Edward Hearle Rodd.*

On the Occurrence of the Spoonbill in Middlesex.

By J. EDMUND HARTING, Esq. F.L.S.

UNTIL the present year I was not aware that the spoonbill (*Platalea leucorodia*) has ever been obtained in Middlesex, nor have I been able to find any record of its appearance in this county.

On the 24th of October last I was informed that a pair of spoonbills had been shot at Kingsbury Reservoir on the previous day. Believing such an occurrence very improbable, I required some evidence to confirm the statement, more especially as on several former occasions I had been led to believe in the capture of a rare species, which proved on examination to be quite a different bird to that described. On one occasion a so-called spoonbill, which I took the trouble of tracing, turned out to be a shoveller duck, and at another time a pair of "longtailed ducks with white heads," instead of being *Anas glacialis* as I had been led to suppose, proved to be merely a couple of male widgeons.

I therefore received the intelligence of the spoonbills last month with a certain amount of doubt; but ascertaining that the birds had been sent to London for preservation, I traced them the following morning to the bird-stuffer with whom they had been left, and luckily arrived in time to find them still in the flesh and perfectly fresh. To my agreeable surprise I found that they were veritable spoonbills. I at once set to work to examine them carefully, and note down the description and measurements of each; and the same evening I saw them skinned, and ascertained the sexes by dissection.

Before stating these details, however, it will perhaps be as well to give first the particulars of their capture, which I subsequently ascertained. The birds were first observed at Kingsbury Reservoir, close to the edge of the water, and, on being disturbed and ineffectually shot at, flew to some little distance, and alighted near a flock of geese in a field adjoining a farm-yard. Thither they were pursued by two gunners, who finding, however, that the birds were very shy and

could not be approached directly, employed a third person to go round through the farm-yard and drive them, while they concealed themselves under a bank where some overhanging bushes formed a good screen. This plan had the desired effect, for the birds came right over them, and were both killed. I was informed by one of the gunners, and by some labourers who saw these spoonbills on the wing, that they flew like herons, but a good deal faster and with the neck stretched out at full length like a duck, instead of being thrown back heron-like between the shoulders. They were not heard to utter any note.

I found on examination that they were male and female birds of the year. The bill, of a brownish flesh-colour, darker towards the tip, was in both very soft and weak, that of the male bird being the darker of the two. The chin and lore completely bare; the former of a yellow, and the latter of a grayish colour. A remarkable feature was the wonderfully small tongue in comparison with the length of bill, the one being not more than an eighth part of the length of the other.

There was no appearance of a crest in either bird, nor was there any trace of buff-colour on the breast.

I was scarcely able to determine the true colour of the eye, since the bird had been dead more than forty-eight hours, but, as far as one could judge by appearances, the irides were hazel with black pupils. The upper portions of the plumage were of a dirty white colour, darker on the back and scapulars, the under parts of a purer white. All the quill-feathers white, with black shafts, presenting a very curious and pretty appearance when expanded. The first four quill-feathers white, with dark brown tips; the first with a dark brown stripe on outer web; the second, first half of outer web brown, second half white; the third and fourth with outer webs nearly all white. The first quill shortest, the second longest in the wing. The tail square and white; the legs black. The feet much webbed, and with the under surface very perceptibly concave. The respective measurements of each were as follows:—

| | Male. | Female. |
|-----------------------|-------------------|-------------------|
| Total length . . . | 2 feet 7½ inches. | 2 feet 6¼ inches. |
| Length of bill . . . | 7 " | 6⅝ " |
| " wing from carpus . | 1 " 2¼ " | 1 " 2 " |
| " tibia . . . | 7½ " | 7¼ " |
| " tarsus . . . | 5½ " | 5½ " |
| " tail . . . | 5 " | 5 " |
| Extent of wings . . . | 4 " 4 " | 4 " 3 " |

Both birds were in tolerably good condition, the male being the plumper and heavier of the two.

With a view of ascertaining what food they had recently obtained, I carefully examined the stomach of each. That of the female was almost empty, but I could recognize a few small fish-bones (probably, from the size, roach), a small mass of vegetable fibre, together with the fruit of a Sparganium and a single carpal of a Potamogeton, probably *P. pectinatus*. That of the male was distended with a larger quantity of small bones and remains of fish. The bones presented the appearance of having been ground up small, being all very much of one size, although the inner coating of the stomach was by no means hard or rough, and I could find no traces of gravel or quartz, nor indeed of any substance which might tend to produce such an effect.

I may add, in conclusion, that I examined these birds very carefully, with a view of ascertaining whether they had escaped from confinement; but as the wings were quite perfect, the tail feathers not in the least worn, and the entire plumage, although immature, yet in good order, while the bodies were healthy and in good condition, I have no doubt that the birds were really wild.

Moving southwards at the approach of winter, and tempted, no doubt, by the broad expanse of the Reservoir above named, which would be perceived by a bird in flight at a very considerable distance, they had unfortunately alighted, and, as it would seem, had barely time to snatch a hasty meal, when they met a cruel and unexpected death.

J. EDMUND HARTING.

Kingsbury, Middlesex, November, 1865.

On the Occurrence of Bartram's Sandpiper near Falmouth.

By DR. BULLMORE.

FROM the numerous enquiries I have received concerning the specimen of Bartram's sandpiper, of which I am the fortunate possessor (a notice of which appeared in the 'Times' of the 14th of November), I am led to infer that a description of this strange visitor to our shores would be anything but unacceptable to many of the readers of the 'Zoologist.' From enquiries instituted by me I find that this bird was flushed by a farmer's son near Mullion from a piece of pasture turnips, where he had just previously risen some six or eight snipes. It rose singly, uttering a short shrill scream, flew over the hedge and dropped

into a ditch by the side of a contiguous road. On the approach of its pursuer it again rose and alighted in the middle of a hay-field, where it was shot, whilst busily occupied in running about on the ground.* It was sent, in company with some woodcocks and snipes, to the game-shop of Mr. J. Webber, of this town, from which place I was fortunate enough to obtain it.

From the general appearance of the bird I was at once satisfied that it was a stranger, being principally led to this inference by its peculiarly shaped bill and the great length and shape of its tail, which latter peculiarity I since find has obtained for it the synonym of "*Le chevalier a longue queue*." The bird in my possession is a faithful representative of the figure depicted in the Supplement to Mr. Yarrell's work on British Birds. This sandpiper may be at once distinguished from any others of its kind by its two primaries (the first in either wing), its long wedge-shaped beautifully variegated tail, and legs, breast-markings and bill.

In its anatomical structure there was nothing peculiarly striking, save the great depth of its keel, the strength of its clavicles, and its firmly adherent vascular lungs, all of which characteristics serve to assign it a place amongst those creatures endowed with great power of endurance and capability for protracted flight. Its measurements, markings, &c., are as follows:—

Whole length 12 inches. Weight 6 ounces 2 drachms. Bill slender and slightly curved at the point, more particularly the upper mandible; from the top to gape, $1\frac{1}{2}$ inch; from top to commencement of forehead, $1\frac{1}{4}$ inch; upper mandible blackish brown in colour, except at the margin of the middle third, which is yellow; lower mandible yellow throughout; nostril elongated $\frac{1}{4}$ th of an inch in length. Irides dusky; forehead and occiput ferruginous, marked with small broad dark brown streaks; side of face and ear-coverts pale ferruginous, finely streaked with brown. Chin, throat and lore pure white.

Front of neck and breast pale ferruginous, marked with narrow streaks, which on the breast assume the appearance of perfectly marked and well-defined arrow-heads.

Belly, vent, and thigh-coverts white. Back of neck ferruginous, faintly streaked with brown. Back dull brownish black, the feathers narrowly bordered with pale ferruginous. Scapulars black, edged with very pale ferruginous; greater wing-coverts dusky brown, edged with ferruginous and irregularly spotted with black; lesser wing-

coverts light brown, tipped with white, having one or more semicircles of black.

Expanse of wings 22 inches; length of fore arm $2\frac{1}{2}$ inches: arm 2 inches; from carpo-digital joint to tip of first primary 6 inches 7 lines. Primaries brownish black; first quill-feather the longest, its shaft pure white; outer web very narrow, dark brown, faintly touched at points with white; inner web white, barred with fourteen rich dark brown bands, which gradually merge into one broad patch, involving the end of the feather for the last inch of its length; second, third, fourth and fifth primaries dark brown, having a few white bars, and being also tipped with white. Secondaries pale brown; both webs wide, blotted with black, faintly tipped and splashed at the edges with white. Tertiaries black, edged with white, considerably longer than secondaries, the last feather but one being as long as the third primary and reaching to within half an inch of the base of the tail.

Tail-feathers twelve in number, wedge-shaped when closed; four central feathers, the longest $3\frac{1}{2}$ inches in length, dark brown in colour, edges and tips orange-white, transversely barred on both vanes with black. Three contiguous feathers on either side rich orange, beautifully barred and blotted with black, the last blot assuming somewhat the appearance of an arrow-head; two outer feathers $2\frac{1}{2}$ inches long, white, with five black bands on outer web; inner web dashed with orange close to the shaft, and irregularly barred with black; rump and tail-coverts black, faintly margined with white.

Length of tibia $2\frac{1}{2}$ inches, feathered to within three-fourths of an inch of the tibia tarsal-joint. Tarsus 2 inches, of a yellow colour, with a slight tinge of green. Toes the same colour as tarsus and tibia; middle toe 1 inch in length; outer $\frac{7}{8}$ inch; inner $\frac{3}{4}$ inch; hinder $\frac{1}{4}$ inch; with a slight attempt at webbing between the outer and middle toe; nails dark brown, triangular, curved and excavated.

Under surface of wings beautifully streaked and barred with silver-gray and white.

The whole surface of the body was loaded with fat.

The tongue long, narrow and sharp-pointed, being hastate in shape; trachea narrow and cylindrical, except at about an inch before its junction with the lungs, where it is slightly dilated. Lungs moderately large, firmly adherent and very vascular; heart normal in size. The stomach was comparatively large, and contained the two elytra and head of the common black beetle, four or five small earth-worms, and a little slimy green herbage. The cæcal appendages, I regret to

say, I was unable to examine, as the intestines had already advanced into a state of decomposition. The breast-bone measured, to horizontal plates, two inches in length, half an inch in width; depth of keel $1\frac{3}{4}$ inch; clavicles 1 inch, and very stout; scapula 2 inches; furculum $1\frac{1}{4}$ inch, much arched and strong.

Some little discrepancy has unfortunately crept into Mr. Wilson's description of this bird, as quoted by Mr. Yarrell, who states, "This bird frequently reaches three-quarters of a pound." My specimen, though loaded with fat, in capital condition, and weighed when fresh, only just brought down the beam at six ounces two drachms, and it appears to me that had it obtained anything like Mr. Wilson's weight it must have been a perfect monstrosity, consequently I am therefore disposed to regard this statement as an entire misprint.

W. K. BULLMORE.

Falmouth, November 17, 1865.

Solitary Snipe in Suffolk.—About the 5th of October, 1865, a fine adult bird, a female, of the solitary snipe was killed in the vicinity of Worlington Hall, near Beccles, in Suffolk. It measured $11\frac{1}{2}$ inches from tip of beak to tip of tail; $5\frac{1}{2}$ inches in the wing from carpal joint; bill $2\frac{1}{2}$ inches. It was in good plumage, and exceedingly fat; it weighed $7\frac{3}{4}$ ounces in full: its gizzard contained only a little fibrous matter.—*T. E. Gunn; Norwich, October, 1865*

The Migration of Birds.—In a paper which I communicated to you some twelve months since upon this subject (Zool. 9364), I referred to an anomaly which presented itself at this season of the year, as to the autumnal or equatorial migration, or what perhaps will be better understood as the great movement from the north towards the south, which takes place at this season of the year, popularly exemplified by the well-known and palatable migration of woodcocks and snipes from the northern countries to Great Britain and the southern countries of Europe, and to the Mediterranean Isles and the North of Africa. In that notice I mentioned that at the Wolf Rock, about nine miles from the Land's End, in a south-westerly direction, a flight of small birds, comprising some of our delicate warblers, the common wren and several other species, came suddenly from the direction of Scilly, alighted on the rock, and, after resting, pursued their flight toward the main land. On Monday last, when the Scilly packet was on her passage from Scilly to Penzance, greenfinches, chaffinches, &c., passed the vessel, going at eight knots an hour, and appeared to be in a rapid migratory course facing a direct east wind. Amongst these, but keeping separate from the main flight, were observed some *tree sparrows*, a species of rare occurrence in Cornwall. I mention this little incident to show that we are all *at sea* ourselves about the true migratorial law. We should easily comprehend the anomaly if the birds of passage in their southerly course were suddenly opposed by a strong southerly gale, but nothing of the sort was the case; the wind had been for days favourable for a southern movement, and at the time mentioned the birds were flying *against* a strong east breeze.—*Edward Hearle Rodd; Penzance, November 10, 1865.*

NOTICES OF NEW BOOKS.

‘*Handbook of the Birds of Australia.*’ By JOHN GOULD, F.R.S., &c.
In Two Volumes. Royal 8vo. Published by the Author, at
No. 26, Charlotte Street, Bloomsbury.

(Second and concluding notice.)

IN my first notice of this valuable work I took occasion to mention the great disadvantage under which both author and reviewer labour in a review of an incomplete work: in the present instance that disadvantage exists no longer, for Mr. Gould, with the most praiseworthy industry and promptitude, has completed a work which may henceforward rank as a most serviceable contribution to our knowledge of antipodean Zoology.

Of Mr. Gould’s more expensive works it may truly be said that they are treasures only to be obtained by the affluent; into such hands as mine and those of thousands of naturalists who, like myself, are thirsting for information, they can never fall; and thus, while they adorn the rich man’s table, and are duly admired, they do not impart that instruction to the masses which ought to result from Mr. Gould’s never-ending labours. This ‘*Handbook of the Birds of Australia*,’ now complete in two volumes, supplies this desideratum as far as Australia itself is concerned, and is by far the most exhaustive account of the *known* Avifauna of any country that has yet issued from the press. The qualification “known” is advisedly introduced, because our knowledge of the interior is still most imperfect, and there is yet unexplored territory in which even the largest Struthionidæ may rove undetected and undreamed of by civilized man. And if Struthionidæ, how much more the various passerine families, of which our entire knowledge is restricted to the observations of some dozen travellers who have now and then touched the shores of this sea-girt continent.

Dr. Jerdon, as I have already shown, has ably performed this task for a large portion of continental India, leaving, however, his great work somewhat incomplete, by restricting his labour to rather capricious geographical limits; and the Avifauna of North America has found most able exponents in the illustrious Wilson, in Nuttall, Audubon and Baird; still, however, allowing abundant room for such a handbook as Mr. Gould’s.

Nothing can be more gratifying to the working ornithologist than to have those various portions of the earth's surface thus physically surveyed, and how delightful will it prove in the hereafter, when Nestor, Dromaius, Apteryx and other genera have followed in the track of *Æpyornis*, *Palapteryx*, *Dinornis* and *Didus*, as they assuredly will follow, to have their portraits and their characters faithfully preserved in a manner as defiant of time as the pyramids of Egypt themselves.

In my former notice I confined my extracts to the general observations in Mr. Gould's Introduction, but now it seems desirable to enter more fully into detail, and to select certain species with a view to exhibit clearly the comprehensive plan on which Mr. Gould has conducted and completed his investigations: the examples I select are the wattled *Talegallus*, the ocellated *Leipoa*, and the Australian *Megapodius*, and although there is no great novelty in the details of economy now reprinted, I think it is the first instance in which they have been brought together side by side, so that the differences may be readily noticed and contrasted.

Wattled Talegallus (*Talegallus Lathamii*).—"It has often been asserted that Australia abounds in anomalies, and in no instance is the truth of this assertion more fully exemplified than in the history of this very singular bird, respecting the situation of which in the natural system much diversity of opinion, as above noticed, has hitherto prevailed. It was consequently one of the birds which demanded my utmost attention during my visit to Australia; and, immediately upon its remarkable habits becoming known to me, I published an account of them in the first volume of the 'Tasmanian Journal' for 1840. The remarks therein contained, and which are recapitulated below, comprise all that is known respecting them, nothing of importance having since been discovered.

"The most remarkable circumstance connected with the economy of this species is the fact of its eggs not being incubated in the manner of birds. At the commencement of the spring the wattled *Talegallus* scratches together an immense heap of decaying vegetable matter as a depository for the eggs, and trusts to the heat engendered by the process of fermentation for the development of the young. The heap employed for this purpose is collected by the birds during several weeks previous to the period of laying; it varies in size from two to many cart-loads, and in most instances is of a pyramidal form. The construction of the mound is either the work of one pair of birds, or,

as some suppose, the united labours of several; the same site appears to be resorted to for several years in succession, the birds adding a fresh supply of materials each succeeding season.

“The materials composing these mounds are accumulated by the bird grasping a quantity in its foot and throwing it backwards to one common centre, the surface of the ground for a considerable distance being so completely scratched over that scarcely a leaf or a blade of grass is left. The mound being completed, and time allowed for a sufficient heat to be engendered, the eggs are deposited in a circle at the distance of nine or twelve inches from each other, and buried more than an arm’s depth, with the large end upwards; they are covered up as they are laid, and allowed to remain until hatched. I have been credibly informed, both by natives and settlers living near their haunts, that it is not an unusual event to obtain half a bushel of eggs at one time from a single mound; and I have myself seen a native woman bring to the encampment in her net half as many as the spoils of a foraging excursion to the neighbouring scrub. Some of the natives state that the females are constantly in the neighbourhood of the mound about the time the young are likely to be hatched, and frequently uncover and cover them up again, apparently for the purpose of assisting those that may have appeared; while others have informed me that the eggs are merely deposited, and the young allowed to force their way unassisted. One point has been clearly ascertained, namely, that the young from the hour they are hatched are clothed with feathers, and have their wings sufficiently developed to enable them to fly on to the branches of trees, should they need to do so to escape from danger; they are equally nimble on their legs; in fact, as a moth emerges from a chrysalis, dries its wings and flies away, so the youthful *Talegallus*, when it leaves the egg, is sufficiently perfect to be able to act independently and procure its own food. This we know from personal observation of the bird in a state of captivity; several old birds having constructed mounds, in which their eggs have been deposited and their young developed, in the Gardens of the Zoological Society in the Regent’s Park. I shall always look back with pleasure to the fact of my being the first to make known these singular habits. Although, unfortunately, I was almost too late for the breeding-season, I nevertheless saw several of these hatching mounds, both in the interior of New South Wales and at Illawarra: in every instance they were placed in the most retired and shady glens, and on the slope of a hill, the part above the mound

being scratched clean, while all below remained untouched, as if the birds had found it more easy to convey the materials down than to throw them up. The eggs are perfectly white, of a long oval form, three inches and three quarters long by two inches and a half in diameter. When disturbed, the wattled Talegallus readily eludes pursuit by the facility with which it runs through the tangled brush. If hard pressed, or when rushed upon by its great enemy, the native dog, it springs upon the lowermost bough of some neighbouring tree, and by a succession of leaps from branch to branch ascends to the top, and either perches there or flies off to another part of the brush. It is also in the habit of resorting to the branches of trees as a shelter from the mid-day sun—a peculiarity that greatly tends to their destruction; for, like the ruffed grouse of America, when assembled in small companies, they will allow a succession of shots to be fired until they are all brought down. Unless some measures be adopted for their preservation, this circumstance must lead to an early extinction of this singular species—an event much to be regretted, since, independently of its being an interesting object for the aviary, it is an excellent bird for the table.

“While stalking about the woods, the Talegallus frequently utters a rather loud clucking noise; but whether this sound is uttered by the female only I could not ascertain; still I think such is the case, and that the spiteful male, who appears to delight in expanding his richly-coloured fleshy wattles and unmercifully thrashing his help-mate, is generally mute.

“In various parts of the brush I observed depressions in the earth, which the natives informed me were made by the birds in dusting themselves.”—Vol. ii. p. 151.

Equally interesting and not very dissimilar is the economy of *Leipoa ocellata*; I prefer calling it by the technical name, feeling a very great repugnance to the greco-latin English names which authors are now pleased to confer on exotic species. The fashion was invented by the French: would it were confined to that busy nation.

Ocellated Leipoa (*Leipoa ocellata*).—“This morning I had the good fortune to penetrate into the dense thicket I had been so long anxious to visit, in search of the *Leipoa*’s eggs, and had not proceeded far before the native who was with me told me to keep a good look-out, as we were among the *Nyou-oo*’s hillocks; and in half an hour after we found one, around which the brush was so thick that we were

almost running over it before seeing it. So anxious was I to see the hidden treasures within, that in my haste I threw aside the black fellow and began scraping off the upper part of the mound; this did not at all please him, and he became very indignant, at the same time making me understand that as I had never seen this nest before I had better trust to him to get out the eggs, or I should, in my haste and impatience, certainly break them. I therefore let him have his own way, and he began scraping off the earth very carefully from the centre, throwing it over the side, so that the mound very soon presented the appearance of a huge basin; about two feet in depth of earth was in this way thrown off, when the large ends of two eggs met my anxious gaze; both these eggs were resting on their smaller apex, and the earth round them had to be very carefully removed to avoid breaking the shell, which is extremely fragile when first exposed to the atmosphere. About a hundred yards from this first mound we came upon a second, rather larger, of the same external form and appearance; it contained three eggs. Although we saw seven or eight more mounds, only these two contained eggs: we were too early; a week later, and we should doubtless have found many more. To give you an idea of the place these birds choose for their remarkable mode of rearing their young, I will describe it as nearly as I can:—The Wonga Hills are about thirteen hundred feet above the level of the sea, in a north-northeast direction from Drummond's House in the Toodyay: their sides are thickly clothed with a dense forest of Eucalypti, and at their base is a thicket, extending for several miles, of upright-growing and thick bushy plants, so high in most parts that we could not see over their tops, and so dense that, if we separated only for a few yards, we were obliged to cooeey, to prevent our straying from each other; this thicket is again shadowed by a very curious species of dwarf Eucalyptus bearing yellow blossoms, and growing from fifteen to thirty feet in height, known to the natives as the spear-wood, and of which they make their spears, digging-sticks, dowaks, &c.; the whole formation is a fine reddish ironstone-gravel, and this the Leipoa scratches up from several yards around, and thus forms its mound, to be afterwards converted into a hot-bed for the reproduction of its offspring. The interior of the mound is composed of the finer particles of the gravel, mixed with vegetable matter, the fermentation of which produces a warmth sufficient for the purpose of hatching. Mr. Drummond, who had been for years accustomed to hot-beds in England, gave it as his opinion that the heat around the eggs was about 89°. In both the

nests with eggs the white ant was very numerous, making its little covered galleries of earth around and attached to the shell, thus showing a beautiful provision of Nature in preparing the necessary tender food for the young bird on its emergence: one of the eggs I have preserved shows the white ants' tracks most beautifully: the largest mound I saw, and which appeared as if in a state of preparation for eggs, measured forty-five feet in circumference, and if rounded in proportion on the top, would have been full five feet in height. I remarked in all the mounds not ready for the reception of eggs, the inside or vegetable portion was always wet and cold, and I imagine, from the state of others, that the bird turns out the whole of the materials to dry before depositing its eggs and covering them up with the soil; in both cases where I found eggs the upper part of the mound was perfectly and smoothly rounded over, so that any one passing it without knowing the singular habit of the bird might very readily suppose it to be an ant-hill: mounds in this state always contain eggs within, while those without eggs are not only *not* rounded over, but have the centres so scooped out that they form a hollow. The eggs are deposited in a very different manner from those of the *Megapodius*; instead of each being placed in a separate excavation in different parts of the mound, they are laid directly in the centre, all at the same depth, separated only by about three inches of earth, and so placed as to form a circle. I regret we were so early; had we been a week later the probability is I should have found the circle of eggs complete. Is it not singular that all the eggs were equally fresh, as if their development was arrested until the full number was deposited, so that the young might all appear about the same time? No one, considering the immense size of the egg, can for a moment suppose the bird capable of laying more than one without at least the intermission of a day, and perhaps even more.


“Like those of the *Megapodius*, they are covered with an epidermis-like coating, and are certainly as large, being three inches and three-quarters in length by two and a half in breadth; they vary in colour from a very light brown to a light salmon. During the whole day we did not succeed in obtaining sight of the bird, although we saw numerous tracks of its feet and many places where it had been scratching; we also saw its tracks on the sand when crossing the dried beds of the swamps, at least two miles from the breeding-thicket, which proves that the bird, in procuring its food, does not confine itself to the brushes around its nest, but merely resorts to them for the purpose of

incubating. The native informed us that the only chance of procuring the bird was by stationing ourselves in sight of the mound, at a little distance, and remaining quiet and immovable till it made its appearance at sun-down; this I attempted, and, with the native, encamped within about twenty yards of the mound about an hour before sun-set, taking the precaution to conceal ourselves well with bushes from the quick eye of the bird, but leaving just a sufficient opening to get a fair sight with my gun; in a half-sitting, half-crouching position, I thus remained in breathless anxiety for the approach of the bird I had so long wished to see, not daring to move a muscle for fear of moving a branch or making a noise by crushing a dead leaf, till I was so cramped I could scarcely bear the pain in my limbs; the bird did not, however, make its appearance, and the native, with the fear of wading through the thicket in darkness (for there was no moon), became so impatient that he started up and began to talk so loud, and make so much noise, that I was compelled to give up all hopes of seeing the bird that night; however, just as we were passing the mound, we started the bird from the opposite side, but, from the denseness of the thicket and the darkness closing around us, I had no chance of getting a shot at it. Mr. Roe, the Surveyor-General, who examined several mounds during his expedition to the interior in the year 1836, found the eggs nearly ready to hatch in the month of November, and invariably seven or eight in number; while another authority has informed me of an instance of fourteen being taken from one mound.”—Vol. ii. p. 155.

I will here insert an extract from a letter addressed to Mr. Gould on the subject of the same bird.

“The mounds they construct are from twelve to thirteen yards in circumference at the base, and from two to three feet in height; the general form being that of a dome. The sand and grass are sometimes scraped up for a distance of from fifteen to sixteen feet from its outer edge.

“The mound appears to be constructed as follows:—A nearly circular hole, of about eighteen inches in diameter, is scratched in the ground to the depth of seven or eight inches, and filled with dead leaves, dead grass and similar materials; and a large mass of the same substances is placed all round it upon the ground. Over this first layer a large mound of sand, mixed with dried grass, &c., is thrown, and finally the whole assumes the form of a dome, as I have before stated.

“When an egg is to be deposited, the top is laid open and a hole scraped in its centre to within two or three inches of the bottom of the layer of dead leaves. The egg is placed in the sand just at the edge of the hole, in a vertical position, with the smaller end downwards. The sand is then thrown in again, and the mound left in its original form. The egg which has been thus deposited is therefore completely surrounded and enveloped in soft sand, having from four to six inches of sand between the lower end of the egg and the layer of dead leaves. When a second egg is laid it is deposited in precisely the same plane as the first, but at the opposite side of the hole before alluded to. When a third egg is laid it is placed in the same plane as the others, but, as it were, at the third corner of the square. When the fourth egg is laid it is still placed in the same plane, but in the fourth corner of the square, or rather of the lozenge, the figure being of this form—; the next four eggs in succession are placed in the interstices, but always in the same plane, so that at last there is a circle of eight eggs all standing upright in the sand, with several inches of sand intervening between each. The male bird assists the female in opening and covering up the mound; and, provided the birds are not themselves disturbed, the female continues to lay in the same mound, even after it has been several times robbed. The natives say that the females lay an egg every day.

“Eight is the greatest number I have heard of from good authority as having been found in one nest; but I opened a mound which had been previously robbed of several eggs, and found that two had been laid opposite to each other in the same plane, in the usual manner; and a third deposited in a plane parallel to that in which the other two were placed, but $4\frac{1}{2}$ inches below them. The circumstance led me to imagine it was possible that there might be sometimes successive circles of eggs in different planes.

* * * * *

“One of the mounds of these birds which had been robbed of its eggs on the 11th of November, some of which were quite fresh, had two fresh eggs laid in it on the 27th of the same month, and the birds were seen at the nest on the morning of the 28th, apparently for the purpose of laying, when the male bird was shot.

“Sometimes several of these mounds are constructed close to one another. I found two within 200 or 300 yards; and have seen five within the distances of four or five miles. They were built in precisely

the same situations that I have seen them in other parts of the continent, that is, in a sandy scrubby country, the site of the mound being in some little open glade, in the very thickest part of the scrub.

"The eggs are of a light pink, the colour being brightest and most uniform when freshly laid. As the time of hatching approaches they become discoloured, and marked in places with dark spots.

| | | | |
|---|---|---|-------------------------|
| " The greatest length of these eggs is about | - | - | $3\frac{6}{10}$ inches. |
| " breadth " | - | - | $2\frac{2}{10}$ " |
| Circumference in direction of length | - | - | 10 " |
| " " breadth | - | - | $7\frac{2}{10}$ " |

"The temperature of the nests I have examined has always been warm; not so much so, however, as I should have thought necessary for the purpose of hatching eggs.

"There are two great peculiarities about these eggs; the first is, that both ends are of nearly the same size, which form is peculiarly adapted to the position in which they are always placed; the egg being compressed in every part as nearly as possible towards the axis, in which the centre of gravity lies, there is the least possible tendency to its equilibrium being destroyed when it is placed in a vertical position. A second peculiarity is the extreme thinness of the shell, and its consequent fragility. This is so great that unless the egg is handled with the greatest care it is sure to be broken; and every effort which has been made to hatch these eggs under domestic fowls has failed, the egg having in every instance been broken by the bird under which it was placed.

"The native name for the bird on the Murray River is *Marrak-ko* or *Marra-ko*; in Western Australia the name of the bird is *Ngow-o* or *Ngow*. The name in Western Australia is given from the tuft on its head, *Ngoweer* meaning a tuft of feathers.

"I have found this bird in different parts of that portion of Australia included between the 26th and 36th parallels of south latitude, and 113th and 141st parallels of east longitude, and I think that there is every probability that it inhabits a much wider range. It is found in all the scrubby districts of South Australia.

"The farthest point north at which I have seen the breeding-places of this bird is Gantheaume Bay. The natives of King George's Sound say the bird exists in that neighbourhood. I have never fallen in with its nests but in one description of country, *viz.* where the soil was dry and sandy, and so thickly wooded with a species of dwarf *Lepto-*

spermum that if you stray from the native paths it is almost impossible to force your way through.

“There is only one male and one female to each mound: they repair an old mound, and do not build a new one; both assist in scratching the sand to the nest. The female commences laying about the beginning of September, or when the spear-grass begins to shoot. Both sexes approach the nest together when the female is about to lay, and they take an equal share in the labour of covering and uncovering the mound. After every sunrise the female lays an egg, and lays altogether from eight to ten. If the natives rob the mound, the female will lay again in the same nest, but she will only lay the full number of eggs twice in one summer. From the commencement of building until the last eggs are hatched four moons elapse (this would give a very long period of time before the eggs were hatched). The young one scratches its way out alone; the mother does not assist it. They usually come out one at a time; occasionally a pair appear together. The mother, who is feeding in the scrub in the vicinity, hears its call and runs to it. She then takes care of the young one as a European hen does of its chick. When the young are all hatched, the mother is accompanied by eight or ten young ones, who remain with her until they are more than half-grown. The male bird does not accompany them. The two sexes have different calls; that of the female is constantly uttered while she walks about in the scrub with her young ones.

“The natives frequently find the eggs and nests, but they seldom see the old birds, which are very timid and quick-sighted. They run very fast, like the emu, roost on trees, and live for a long time without water, but drink when it rains. The natives state that the Entozoa which I found in the bird mentioned above were unusual, and that it must have been in ill health.

“It is a remarkably stout, compact bird, and appears when alive to have as large a body as the female turkey, but it is shorter on the legs.”

To this Mr. Gould adds—

“Besides the above valuable notes by Gilbert and Sir George Grey, Mr. Richard Schomburgk has kindly lent me a copy of the ‘*Leopoldina*,’ Haft iii., October, 1862, containing a communication from him respecting this bird, which in the main agrees with the above statements, but he has been led to believe that an interval of three or four days elapses between the laying of the eggs by one female; he also particularly remarks upon the base of the mound being sunk in

the ground to the depth of twenty or twenty-four inches, and the cavity filled with leaves of the *Eucalypti*, on the top of and surrounding which the mound of sand and mixed herbage is raised. Mr. Schomburgk also states that an egg he took home and placed under a domestic hen was hatched the next day, and the young bird appeared covered with feathers and capable of at once obtaining its own food.”—Vol. ii. pp. 160—166.

I cannot assume that the economy of these remarkable birds will prove novel to all my readers, but I am quite sure they will be read with interest even by those who were previously acquainted with the facts detailed; and extraordinary as the account of *Talegallus* and *Leipoa* may be considered, that of *Megapodius Tumulus* will assuredly be read with still greater interest: it is extracted from Mr. Gilbert's notes. The incredulity of the settlers, who could not assign any other origin to these tumuli than that they were burial-places of the natives, and the knowledge possessed by the natives that they were the handiwork of birds, are facts which give the narrative additional interest. How frequently do we draw our conclusions from very insufficient premises, and construct hypotheses that will harmonize with our own preconceived idea! There is a dawn of intelligence exhibited by the natives in their positive assertion that these tumuli were the work of birds that is also worthy of notice; not that I would argue from this the capacity for farther education, for I believe the “thus far and no farther,” although its application by man is futile, nevertheless exists in nature, and I never expect to see the boundary line passed over, yet every step which man or animals can achieve must be a matter of interest, and, however low our estimate of an Australian's intelligence, let us at least give him credit for all that he possesses; and these volumes of Mr. Gould's tend greatly to exhibit the native mind in its true colours. But I must devote so much space to the *Megapode* itself that I will not trouble the reader with my own reflections.

Australian Megapode (*Megapodius Tumulus*).—“The following account of its habits is taken from Gilbert's notes, and novel and extraordinary as those of *Talegallus* and *Leipoa* may have been considered, this will be read with even greater interest:—

“On my arrival at Port Essington my attention was attracted to numerous mounds of earth, which were pointed out to me by some of the residents as the tumuli of the aborigines; on the other hand, I was assured by the natives that they were formed by the *Megapode* for the

purpose of incubating its eggs: their statement appeared so extraordinary, and so much at variance with the general habits of birds, that no one in the settlement believed them or took sufficient interest in the matter to examine the mounds, and thus to verify or refute their accounts; another circumstance which induced a doubt of their veracity was the great size of the eggs brought in by the natives as those of this bird. Aware that the eggs of *Leipoa* were hatched in a similar manner, my attention was immediately arrested by these accounts, and I at once determined to ascertain all I possibly could respecting so singular a feature in the bird's economy; and, having procured the assistance of a very intelligent native, who undertook to guide me to the different places resorted to by the bird, I proceeded on the 16th of November to Knocker's Bay, a part of Port Essington Harbour comparatively but little known, and where I had been informed a number of these birds were always to be seen. I landed beside a thicket, and had not proceeded far from the shore ere I came to a mound of sand and shells, with a slight mixture of black soil, the base resting on a sandy beach, only a few feet above high-water mark; it was enveloped in the large yellow-blossomed *Hibiscus*, was of a conical form, twenty feet in circumference at the base and about five feet in height. On pointing it out to the native and asking him what it was, he replied, 'Oooregoorga Rambal,' Megapode's house or nest. I then scrambled up the sides of it, and to my extreme delight found a young bird in a hole about two feet deep; it was lying on a few dry withered leaves, and appeared to be only a few days old. So far I was satisfied that these mounds had some connexion with the bird's mode of incubation; but I was still sceptical as to the probability of these young birds ascending from so great a depth as the natives represented; and my suspicions were confirmed by my being unable to induce the native, in this instance, to search for the eggs, his excuse being that "he knew it would be useless, as he saw no traces of the old birds having recently been there." I took the utmost care of the young bird, intending to rear it, if possible; I therefore obtained a moderately sized box, and placed in it a large portion of sand. As it fed rather freely on bruised Indian corn, I was in full hopes of succeeding; but it proved of so wild and intractable a disposition that it would not reconcile itself to such close confinement, and effected its escape on the third day. During the period it remained in captivity it was incessantly occupied in scratching up the sand into heaps; and the rapidity with which it threw the sand from one end of the box to the other was quite sur-

prising for so young and small a bird, its size not being larger than that of a small quail. At night it was so restless that I was constantly kept awake by the noise it made in its endeavours to escape. In scratching up the sand it only used one foot, and having grasped a handful, as it were, the sand was thrown behind it, with but little apparent exertion, and without shifting its standing position on the other leg; this habit seemed to be the result of an innate restless disposition and a desire to use its powerful feet, and to have but little connexion with its feeding; for although Indian corn was mixed with the sand, I never detected the bird in picking any of it up while thus employed.

““ I continued to receive the eggs without having an opportunity of seeing them taken from the mound until the 6th of February, when, on again visiting Knocker's Bay, I had the gratification of seeing two taken from a depth of six feet in one of the largest mounds I had then seen. In this instance the holes ran down in an oblique direction from the centre towards the outer slope of the hillock, so that, although the eggs were six feet deep from the summit, they were only two or three feet from the side. The birds are said to lay but a single egg in each hole, and after the egg is deposited the earth is immediately thrown down lightly until the hole is filled up; the upper part of the mound is then smoothed and rounded over. It is easily known when a Megapode has been recently excavating, from the distinct impressions of its feet on the top and sides of the mound, and the earth being so lightly thrown over, that with a slender stick the direction of the hole is readily detected, the ease or difficulty of thrusting the stick down indicating the length of time that may have elapsed since the bird's operations. Thus far it is easy enough; but to reach the eggs requires no little exertion and perseverance. The natives dig them up with their hands alone, and only make sufficient room to admit their bodies and to throw out the earth between their legs; by grubbing with their fingers alone they are enabled to follow the direction of the hole with greater certainty, which will sometimes, at a depth of several feet, turn off abruptly at right angles, its direct course being obstructed by a clump of wood or some other impediment. Their patience is, however, often put to severe trials. In the present instance, the native dug down six times in succession to a depth of at least six or seven feet without finding an egg, and at the last attempt came up in such a state of exhaustion that he refused to try again; but my interest was now too much excited to relinquish the opportunity of verifying the native's statements, and by the offer of an addi-

tional reward I induced him to make another effort: this seventh trial proved successful, and my gratification was complete, when the native with equal pride and satisfaction held up an egg, and after two or three more attempts produced a second, thus proving how cautious Europeans should be of disregarding the narratives of these poor children of nature, because they happen to sound extraordinary or different from anything with which they were previously acquainted. I revisited Knocker's Bay on the 10th of February, and having with some difficulty penetrated into a dense thicket of cane-like creeping plants, I suddenly found myself beside a mound of gigantic proportions. It was fifteen feet in height and sixty in circumference at the base, the upper part being about a third less, and was entirely composed of the richest description of light vegetable mould; on the top were very recent marks of the bird's feet. The native and myself immediately set to work, and, after an hour's extreme labour, rendered the more fatiguing from the excessive heat, and the tormenting myriads of mosquitoes and sand-flies, I succeeded in obtaining an egg from a depth of about five feet; it was in a perpendicular position, with the earth surrounding and very lightly touching it on all sides, and without any other material to impart warmth, which, in fact, did not appear necessary, the mound being quite warm to the hands. The holes in this mound commenced at the outer edge of the summit, and ran down obliquely towards the centre; their direction, therefore, is not uniform. Like the majority of the mounds I have seen, this was so enveloped in thickly foliaged trees as to preclude the possibility of the sun's rays reaching any part of it. The mounds differ very much in their composition, form and situation; most of those that are placed near the water's edge were formed of sand and shells, without a vestige of any other material, but in some of them I met with a portion of soil and decaying wood: when constructed of this loose material, they are very irregular in outline, and often resemble a bank thrown up by a constant heavy surf. One remarkable specimen of this description, situated on the southern side of Knocker's Bay, has the appearance of a bank, from twenty-five to thirty feet in length, with an average height of five feet; another even more singular is situated at the head of the harbour, and is composed entirely of pebbly iron-stone, resembling a confused heap of sifted gravel; into this I dug to the depth of two or three feet, without finding any change of character; it may have been conical originally, but is now without any regularity, and is very extensive, covering a space of at least a hundred and fifty feet in circumference.

These remarkable specimens would, however, seem to be exceptions, as by far the greater number are entirely formed of light black vegetable soil, are of a conical form, and are situated in the densest thickets. Occasionally the mounds are met with in barren, rocky and sandy situations, where not a particle of soil similar to that of which they are composed occurs for miles round: how the soil is produced in such situations appears unaccountable; it has been said that the parent birds bring it from a great distance; but as we have seen that they readily adapt themselves to the difference of situation this is scarcely probable: I conceive that they collect the dead leaves and other vegetable matter that may be at hand, and which, decomposing, forms this particular description of soil. The mounds are doubtless the work of many years, and of many birds in succession: some of them are evidently very ancient, trees being often seen growing from their sides; in one instance I found a tree growing from the middle of a mound which was a foot in diameter. I endeavoured to glean from the natives how the young effect their escape; but on this point they do not agree, some asserting that they find their way unaided; others, on the contrary, affirmed that the old birds, knowing when the young are ready to emerge from their confinement, scratch down and release them. The natives say that only a single pair of birds are ever found at one mound at a time, and such, judging from my own observation, I believe to be the case; they also affirm that the eggs are deposited at night, at intervals of several days, and this I also believe to be correct, as four eggs taken on the same day, and from the same mound, contained young in different stages of development; and the fact that they are always placed perpendicularly is established by the concurring testimony of all the different tribes of natives I have questioned on the subject.

“The Megapode is almost exclusively confined to the dense thickets immediately adjacent to the sea-beach; it appears never to go far inland, except along the banks of creeks. It is always met with in pairs or quite solitary, and feeds on the ground, its food consisting of roots, which its powerful claws enable it to scratch up with the utmost facility, and also of seeds, berries and insects, particularly the larger species of Coleoptera. It is at all times a very difficult bird to procure; for although the rustling noise produced by its stiff pinions when flying may be frequently heard, the bird itself is seldom to be seen. Its flight is heavy and unsustained in the extreme; when first disturbed it invariably flies to a tree, and on alighting stretches out its

head and neck in a straight line with its body, remaining in this position as stationary and motionless as the branch upon which it is perched; if, however, it becomes fairly alarmed, it takes a horizontal but laborious flight for about a hundred yards, with its legs hanging down as if broken. I did not myself detect any note or cry; but, from the native's description and imitation of it, it much resembles the clucking of the domestic fowl, ending with a scream like that of the peacock.

“I observed that the birds continued to lay from the latter part of August to March, when I left that part of the country; and, according to the testimony of the natives, there is only an interval of about four or five months, the driest and hottest part of the year, between their seasons of incubation. The composition of the mound appears to influence the colouring of a thin epidermis with which the eggs are covered, and which readily chips off, showing the true shell to be white; those deposited in the black soil are always of a dark reddish brown, while those from the sandy hillocks near the beach are of a dirty yellowish white; they differ a good deal in size, but in form they all assimilate, both ends being equal; they are three inches and five lines long by two inches and three lines broad.”

“The following interesting account of the breeding-places of this remarkable bird has been transmitted to me by Mr. John Macgillivray as the result of his observations on Nogo or Megapodius Island in Endeavour Straits. It will be seen that its range is more extensive than I had assigned to it:—‘The most southern locality known to me for this singular bird is Haggerston Island (in lat. $12^{\circ} 3'$ South), where I observed several of its mounds of very large size, but did not see any of the birds. During the survey of Endeavour Straits in H.M.S. ‘Bramble,’ I was more fortunate, having succeeded in procuring both male and female on the island marked ‘Nogo’ upon the chart, where I resided for several days for that sole purpose. On this small island, not more than half a mile in length, rising at one extremity into a low rounded hill densely covered with jungle (or what in New South Wales would be called ‘brush’), three mounds, one of them apparently deserted before completion, were found. The two others were examined by Mr. Jukes and myself. The most recent, judging from the smoothness of its sides and the want of vegetable matter, was situated upon the crest of the hill, and measured 8 feet in height (or $13\frac{1}{2}$ from the base of the slope to the summit) and 77 feet in circumference. In this mound, after several hours’ hard digging into a

well-packed mass of earth, stones, decaying branches and leaves and other vegetable matter, and the living roots of trees, we found numerous fragments of eggs, besides one broken egg containing a dead and putrid chick, and another whole one which proved to be addled. All were imbedded at a depth of *six feet* from the nearest part of the surface, at which place the heat produced by the fermentation of the mass was considerable.

“The egg, $3\frac{1}{4}$ by $2\frac{1}{8}$ inches, was dirty brown, covered with a kind of epidermis, which easily chipped off, exposing a pure white surface beneath. Another mound, situated at the foot of the hill close to the beach, measured no less than 150 feet in circumference; and to form this immense accumulation of materials the ground in the vicinity had been scraped quite bare by the birds, and numerous shallow excavations pointed out whence the materials had been derived. Its form was an irregular oval, the flattened summit not being central as in the first instance, but situated near the larger end, which was elevated 14 feet from the ground, the slope measuring, in various directions, 18, $21\frac{1}{2}$ and 24 feet. At Port Lihou, in a small bay a few miles to the westward, at Cape York and at Port Essington, I found other mounds, which were comparatively low, and appeared to have been dug into by the natives. The great size the tumuli (which are probably the work of several generations) have attained on Haggerston and Nogo Islands arises doubtless from those places being seldom visited by the aborigines. I found several eggs of large size in the ovarium of a female shot in August, while the condition of the oviduct showed that an egg had very recently passed; hence it is probable that, in spite of their great comparative size, one bird lays several; but whether each mound is resorted to by more than one pair I had not the means of ascertaining. Few birds are more wary and less easily procured than the Megapodius; it inhabits the belts of brush along the coast, and I never found the tumulus at a greater distance from the sea than a few hundred yards. When disturbed, it seldom rises at once, unless on the margin of a thicket, but runs off to some distance and then takes to wing, flying heavily, but without any of the whirring noise of the true Gallinaceæ. It seldom takes a long flight, and usually perches on a tree, remaining there in a crouching attitude with outstretched neck, but flying off again upon observing any motion made by its pursuer; and it is only by cautiously sneaking up under cover of the largest trees that it can be approached within gun-shot. As an example

of its shyness, I may mention that a party of three persons, scattered about in a small jungle on Nogo Island, for the purpose of shooting the *Megapodius*, did not see a single bird, although they put up several, one of which came towards me, and perched, unconscious of my presence, within twenty yards. At Port Essington I have shot this bird among mangroves, the roots of which were washed by the sea at high water; and Capt. F. P. Blackwood killed one while running on the mud in a similar locality, in both instances close to a mound. I never witnessed the escape of the young from the mound; but one as large as a quail, and covered with feathers, was brought to Lieut. Ince by a native, who affirmed that he had dug it out along with several eggs.'—Vol. ii. p. 168.

This notice has extended to a most unreasonable length, but I think the long extracts will answer a double purpose: they will interest every one of my readers, and will recommend Mr. Gould's 'Manual' far more effectually than any comments of my own. It is indeed a great pleasure to me to have it in my power thus to promote and encourage the circulation of sound trustworthy Ornithology amongst an English public. I could gladly have dwelt for another dozen pages or so on points still unnoticed, more especially the sixty parrots which are so carefully described, but I forbear, seeing, especially, how large an arrear of work I am indebted both to authors and contributors. Of this 'Manual' I can only add that it is *essential* to every student of Ornithology.

EDWARD NEWMAN.

Notes on the Quadrupeds of Lanarkshire.

By EDWARD R. ALSTON, Esq.

(Continued from page 11).

Hedgehog.—Being anxious to observe the daily life of this curious animal, I procured a fine large male in the beginning of July last. He refused food for the first day or two, but was unable to resist the temptation of a raw egg, and the ice being thus broken he soon became reconciled to captivity. At first he was kept in a large squirrel-cage, but his strong smell being disagreeable within doors, he was removed to one of the small areas to which I have repeatedly alluded. Here he was provided with a sleeping-box with a bed of hay:

towards the end of the month a companion was got for him, and a third specimen was afterwards added to this "happy family." On the second hedgehog being placed in the area a fight took place, but after a time the two became good friends, although they sometimes quarrelled at meal-time. The mode of attack was usually as follows:—One hedgehog got behind the other, and tried to seize it by the hind leg or by the unprotected skin of the belly, when the assailed party uttered a short snort, elevated his spines, and either turned on the enemy or beat a retreat. They were never heard to utter any cry, unless this angry snort can be so called, and appear to be almost as mute as the kangaroo. They very soon became quite tame, or rather fearless, not even rolling themselves up when handled. They all seemed to object very much to being disturbed in their mid-day slumbers: if removed from their sleeping-box they scuttled back again with ludicrous haste. When asleep they lay half-rolled up, with their heads between their fore legs. At sun-down they came out to feed and to walk about their prison-yard, and I believe that they remained wakeful the whole night. The gait of these hedgehogs was very peculiar; first a short run, then a pause, and then another advance: if any one approached they sat up on their haunches and sniffed the air in the direction of the intruder. I am sorry I cannot give them a good character for cleanliness, for they carried what meat they could not eat into their house, and seemed content to sleep on the putrifying mass: probably they feed on the maggots which are thus bred. They were fed principally on raw meat and bread and milk, which last they lapped like a dog. In eating they had a curious way of smacking their lips loudly, biting sideways like a pig. They could never be induced to eat fruit or roots of any kind, although they are said to be very fond of some kinds. An egg was a special delicacy, and was always eaten in the same way: a hole was bitten in the shell, and the contents licked out, the opening being enlarged as they went on; many small fragments of the shell were swallowed, but not digested. When small animals were given them the entrails were always eaten first; indeed this appears to be the usual habit of the Insectivora, just as the head and neck are the tit-bits of the weasel tribe: I have observed the same habit in the common shrew and the mole (Zool. 9707). As F. von Tschudi states that these animals devour moles when they find them on the surface I gave a dead one to my first hedgehog: next morning nothing was left of it but the tough skin, neatly turned inside out, part of the head and the limbs; all the rest of the bones, some of which are powerfully developed

in the mole, had been devoured. At another time a large rat was disposed of in like fashion; mice and frogs were also eaten, but shrews were rejected. Towards the end of October the hedgehogs appeared not to be thriving; one of them died, and the other two were set at liberty. On the 6th of July last I saw a hedgehog's nest, which had been mown over on a bank; the two young ones, apparently about a week old, were deserted by their mother. The nest was placed in a hollow in the bank, and was a large domed structure of moss and dead leaves. The young ones were hideous little brutes, with large shapeless heads, swollen toad-like bodies, and short sprawling limbs: their backs were thinly covered with short spines, which were rapidly becoming hard; some were dark and others white. The rest of their skins was livid, naked and wrinkled, and their eyes were not yet open. White of Selborne (in his thirty-fourth letter) describes a litter of these "little pigs" as having small *hanging* ears, but this was not the case with the present specimens, which I have preserved in spirits.

Brown Rat.—In summer many rats live in burrows in banks and hedge-rows, returning to the houses and farm-yards when winter approaches. When pursued by dogs I have often seen them climb trees, showing a great deal of activity among the branches. Mr. Buckland, in his 'Curiosities of Natural History' (first series, p. 91), gives an account of the way in which rats gnaw the elephant-tusks in the ivory-warehouses of London, and it would appear that this is not their only peculiar and expensive taste; some years ago a large quantity of amber pipe mouth-pieces were destroyed in a tobacconist's shop in Glasgow by these animals, the marks of their sharp incisors being distinctly visible on the remaining fragments. So little has been recorded of the progress of the great murine invasion of the last century that I am induced to quote the following passage from the 'Statistical Account of Scotland' (by the parish ministers), thinking that it will probably be new to most of your readers:—"Their first appearance (in Peeblesshire) was in the minister's glebe at Selkirk, about the year 1770 or 1777, where they were found burrowing in the earth, a propensity which occasioned considerable alarm, lest they should undermine houses. They seemed to follow the courses of waters and rivulets, and passing from Selkirk they were next heard of at the Mill of Traquhair; from thence, following up the Tweed, they appeared in the mills of Peebles; then, entering by Lyme Water, they arrived at Flemington Mill in this parish (Newlands), and coming up the Lyme,

they reached this neighbourhood about the year 1791 or 1792." (Stat. Acc. Peeblesh. p. 136.)

EDWARD R. ALSTON.

. Stockbriggs, Lesmahagow, January 4, 1866.

Ornithological Notes from Shetland. By H. L. SAXBY, M.D.

(Continued from page 20).

SEPTEMBER, 1865.

September 1. Wind N. Sudden increase in the number of rock pipits.

- „ 2. „ S.E. Oystercatcher last seen.
- „ 3. „ S.E. Curlews re-appearing along shore.
- „ 3. „ S.E. Ravens becoming more numerous.
- „ 22. „ S.W. Several male chaffinches arrived.
- „ 30. „ S.E. Young wheatears still remaining.

Knot.—During the early part of the month knots continued to appear in large numbers. On arriving here they are exceedingly tame, so that it is by no means difficult to approach within half-a-dozen yards of them upon the open shore, but they soon become suspicious, and when once fairly roused fly high and wildly, wheeling over the ground many times before alighting. Usually we meet with them in small parties of about a dozen, but occasionally several of these join and continue in company for days together. Whatever may be the case elsewhere, here they seem to prefer gravelly to sandy or muddy places, the attraction, no doubt, consisting in the myriads of small periwinkles which are found below high-water mark in the former situations. Knots generally keep close together while feeding, and although some occasionally stray apart, they seem to become suddenly aware of the fact, and hastily return to the main body. As far as I can ascertain, it is their custom to feed silently, but the moment an intruder is perceived, without interrupting their employment, they commence a constant low chattering, not unlike that made by a flock of starlings, but when too closely approached they stand motionless for a few seconds and then fly off, uttering louder cries. Very often they alight close to their dead or wounded companions, not taking wing again until the shooter is within a few steps of them, and even then they are nearly sure to realight close to the same spot. When wounded these birds will crouch and hide if they happen to fall upon the land, and

stones thrown at them only cause them to crouch still closer, but on falling into the water they use every effort to escape, and swim remarkably well, but I am not aware that they dive on such occasions. Only a few days ago one which was slightly wounded and had fallen into the water made such good use of the feet and the sound wing that, although unable to rise from the surface, and notwithstanding a brisk gale, it very soon reached a small holm about fifty yards to windward. They avoid turning back to the wind when they drop into the water, for a strong gust is very liable to catch them under the wings and plunge the fore part of the body beneath the surface. Their plumage suffers less from immersion than does that of most other sandpipers. At all times, but more especially during flight, the white upper tail-coverts are conspicuous.

Lesser Blackbacked Gull.—Lesser blackbacked gulls remained in Unst up to the 6th of September. Last year their departure took place about a week earlier.

Turtle Dove.—The turtle dove mentioned in my last communication (Zool. S. S. 19), remained until the 9th of September (wind S.). It regularly came to roost in one particular tree about sunset every evening, but I could never even hear of it in the day-time.

Gannet.—On the 20th of September some boys brought me a fine adult male of this species, which they had just caught upon the hill of Vallafiel, about half a mile from the sea. They said that, after making some slight attempts to escape, it turned and attacked them with its bill when they drew near. It was in good condition, and had apparently been in perfect health at the time of its capture; therefore it seems probable that the boys were correct in their statement that the length of its wings hindered it from rising from the level ground.

Sky Lark.—Sky larks were heard singing from the 20th of September to the end of the month. The song was less powerful than in spring, and but slightly varied.

Golden Plover.—Golden plovers are still numerous, but the flocks are smaller than they were some weeks ago.

Heron.—On the 20th of July a living heron was brought to me by a man whose dog had caught it upon some marshy ground by the Loch of Cliff. It was evidently a young bird of the year, and although it was well grown and fully fledged, a considerable quantity of down was yet remaining among the plumage, particularly about the top of the head, where there were also some long, slender filaments, very much resembling shreds of tow. Thinking that the bird would soon recover

from the slight injury inflicted by the dog's teeth, I turned it into some fields where there were several large pools and a few streams, all well stocked with trout; but here it was soon discovered by some boys, who, after keeping it for some days without being able to make it take food, sold it to a friend of mine, who immediately sent it as a present to me. Unfortunately for my hopes of gaining some information as to the changes of plumage and the times of their occurrence, it lived no longer than two months. Having turned it loose into the garden, I placed near it a pan of water containing fish of several kinds, but next morning they still remained untouched, and the bird appeared to be dying. I then placed a small trout between its mandibles, and it was instantly swallowed with eagerness; next day the process was repeated, and afterwards I continued the supply regularly, but in larger quantity. The bird very soon grew strong, and in a few weeks would come running towards me when I called, sometimes greeting my appearance with notes resembling those of an adult, though they were not so loud. It rapidly became exceedingly tame, never attempting to leave the garden, and allowing me to carry it about and handle it as I pleased. No preference was shown for any particular kind of food; trout, pollacks, flounders, small birds, slugs, earth-worms, and even bread, were each swallowed with equal satisfaction, but up to the very last day of its short existence it could never be prevailed upon to take food of its own accord, even after long abstinence. When fish were thrown into the water, the bird lowered its bill so as almost to touch the surface, and there would remain perfectly motionless for many minutes, as though fascinated. Even after health and strength were fully regained, it displayed but little activity, except during the night, when it would occasionally wander as far as the garden-walls would permit, but why it never made use of its wings to pass the barrier I am unable to imagine. For the first few days it remained in one spot, sleeping with the bill and the fore part of the head concealed beneath the angle of the wing. On the sixth day I missed it, and after some trouble found it sitting upon a branch about two feet from the ground in the middle of a thick bush, and ever afterwards it showed a decided preference for like situations. In feeding it, I inserted the fish between the tips of the mandibles,—a very short distance was sufficient,—then, on my withdrawing my hands, the bill was pointed towards the ground, and by a series of jerking movements the fish was rapidly brought as far as the throat, when both neck and bill were pointed upwards, and the jerking continued until the tail of

the fish disappeared; then the neck was gradually retracted and all voluntary effort to swallow ceased. The lower mandible was capable of considerable dilatation at the base, so that a morsel of food four inches in diameter could be swallowed without much difficulty. During the whole process, and especially when it was much prolonged, saliva flowed abundantly, but nevertheless it was always necessary for me to dip the food in water before offering it. Fish were never swallowed otherwise than head foremost. I never saw them tossed in the air and caught again, in the manner described by some authors, but with the bill pointed towards the ground they were shaken about, suffered to fall for a short distance, and quickly grasped again, until, by frequent repetition of the process, they were brought into the desired position. The grasp of the bill was exceedingly powerful. Once, in my haste, I clumsily inserted a finger instead of a fish, and thus, as the bird quickly drew back its head, the finely serrated edges of the upper half of the bill inflicted two deep cuts as cleanly as if they had been made with a knife. After the food had been swallowed, the tongue was often rapidly protruded and slowly withdrawn. In stuffed specimens of the heron, the wires which support the legs are usually so placed that the so-called knees are widely apart; in this individual, however, those parts were so close together as sometimes to meet, thus causing a very unpleasing "knock-kneed" appearance. Another mistake upon the part of the bird-stuffer is to place the eyes quite flat in the head: on looking from above upon the head of the living bird it will be seen that they project considerably posteriorly, so as to look forwards. Almost everyone who has seen a recently-killed heron, must have observed upon the bill and legs a peculiar bluish powder resembling the "bloom" upon a plum. Not long ago I read somewhere that this was a luminous substance secreted for the purpose of attracting fish at night. Delighted with the idea, I at first hung up dead herons in dark cupboards, but, unfortunately for the above ingenious theory, the cupboards remained as dark as before, and even when, thinking that this was in consequence of the birds being dead, I visited my short-lived captive under the trees one dark night, so far from beholding "a faint glimmering as of subdued moonbeams," so eloquently described by the author alluded to, I with difficulty made out a shapeless black lump. The powder is not found upon the bill and legs alone; the whole plumage is filled with it, so that it comes off upon one's clothes, and when the bird falls into calm water, a large quantity of bluish dust immediately spreads around upon the surface. I often

rubbed it from the legs and bill, and those parts invariably remained free from it as long as they were kept from contact with the plumage. As to the supposed use of the pectinated middle claw I can say but little. That claw alone was used in scratching the neck and head, a process which was repeated very frequently, but again, unfortunately for theory, it must be observed that barn-door fowls have precisely the same habit. Possibly these notes contain nothing new, but I have nothing better to offer, the poor heron having wandered one dark night into the garden-well, from which the stepping-board had been thoughtlessly removed by a servant.

OCTOBER, 1865.

Sky Lark.—During the early part of October sky larks were still singing, but nearly the whole of them disappeared as soon as the cold northerly winds commenced.

Brambling.—A few bramblings arrived on the 1st of October (wind S.E.), and their number constantly increased during the next four days; their arrival always took place in the night, and with a S.E. or S.W. wind.

Redwing.—Redwings were first seen on the 2nd (wind S.E.): they fed almost entirely upon rowan-berries, and gradually deserted us as the supply diminished.

Snow Bunting.—On the 4th (wind S.W.) I observed the first snow buntings. They kept to the hills for about a fortnight, after which time the small flocks collected and descended together to the stubble-fields, where they still remain feeding upon the fallen oats. Last year snow buntings appeared one day earlier.

Goldencrested Regulus.—A number of goldcrests also visited us on the 4th. Immediately after their arrival they frequented enclosures in the neighbourhood of houses; but, gradually extending their wanderings, they became distributed over most part of the island. I often met with them upon the stony hill-sides, and upon one occasion on a high sea-cliff.

Wheatear.—A very few wheatears remained as late as the 5th. All of them seemed to be young birds of the year.

Wild Duck.—Large numbers of wild ducks have been arriving during the whole month. On fine evenings I frequently observe them feeding in the stubble with the tame ducks, and upon these occasions it is not very difficult to approach them openly and obtain a long shot.

Twite.—Twites have now gathered into large flocks. In winter, as well as in summer, adult males have red upon the lower part of the back, but in the former season the colour is far less brilliant.

Brent Goose.—On the 6th (wind W.) two fine brent geese, both males, were killed at one shot upon a small loch at Whale Ayr, close to the sea. No others were seen.

Fieldfare.—A small flock of fieldfares arrived on the 12th, and a larger one on the 19th. On both occasions the wind was blowing strongly from the N.E.

Goldeneye and Tufted Duck.—On the 14th I observed small parties of goldeneyes and tufted ducks upon the loch at Belmont, where, I was told, they arrived about ten days previously. One of the former species which fell winged into the water, afterwards escaped two shots by diving. I then sent the dog in after it, but it dived almost under his very jaws, and I never saw it again.

Rock Pipit.—As soon as the snow commenced, on the 16th, large numbers of rock pipits collected from the fields and assembled in the gardens at Halligarth, where many of them still remain.

Common Bunting.—On the 17th a brisk gale from the N.E. brought a large flock of buntings, but, contrary to their custom, they disappeared a few days afterwards.

Lapwing.—Lapwings left us, as usual, as soon as their young were fully fledged: I was therefore not a little surprised to see an individual of this species by the loch at Bunness on the 19th, after a stiff breeze from the N.E. Last year I saw one on the 26th of November, but upon that occasion a gale was blowing from the S.E.

Shorteared Owl.—A number of shorteared owls arrived between the 14th and 29th, during a succession of gales from the N. and N.E. They kept mostly to the hills, but I saw one at Halligarth sitting composedly upon the ground beneath some bushes. It must have been sleeping, for it allowed me to walk up within a yard of where it was sitting, and had I observed it in time I might easily have crept up and caught it.

Siskin.—The siskin is extremely rare in this island. I was delighted to observe a flock of about two dozen in the garden on the 24th. They were rather wild, but with a little caution I succeeded in obtaining two specimens, which, however, I have not yet had leisure to examine.

Woodcock.—On the 28th I saw a woodcock rise from among some dead leaves in the garden.

Willow Wren.—On the 29th the gale suddenly changed to S.E. with heavy rain, and while it was at its height I saw a willow wren fly over the south wall of the garden and hastily alight among some bushes: evidently it had been long upon the wing, for it was so exhausted that I might have caught it in my hat, had I been so inclined.

HENRY L. SAXBY.

Baltasound, Shetland, October 31, 1865.

A List of Birds observed in the two adjoining Parishes of Dunipace and Larbert, in Stirlingshire. By J. A. HARVIE BROWN, Esq.

Merlin.—I have shot two specimens of this pretty little hawk, and have seen many more, although it is the least common of the three mentioned in this list. I have risen this bird more than once from heather during the breeding-season, but hitherto have always failed in finding its nest, though I am thoroughly convinced that a few breed in this parish (Dunipace). The merlin is generally known here as the “small blue hawk.”

Kestrel.—Local name, the “red hawk.” The kestrel is our commonest hawk, and breeds around this neighbourhood every year, in spite of persecutions from the gamekeepers, &c. Breeds regularly in the ruins of Torwood Castle.

Sparrowhawk.—Local name, the “blue hawk.” Not so common as the last species, but breeds regularly with us.

Longeared Owl.—Common. Breeds frequently, but not, I think, regularly.

Barn Owl.—Not quite so common as the last-mentioned species. I have only found the nest myself once in these parishes, but I believe that a pair breed regularly in some part of the ruins of an old bleach-field near this. I hear them crying very frequently during the night.

Tawny Owl.—Local. Breeds in Torwood Forest. I have seen a few in Dunipace.

Great Gray Shrike.—Local name, “butcher bird.” I have one specimen in my collection, which was shot in Dunipace parish, about seven years ago: it was stuffed by a man in the village, evidently with clay or stucco, by its weight, and spoiled accordingly. In October, 1860, I pursued a very fine great gray shrike for some time; I had no gun with me, or I should easily have secured it, as it was exceedingly

tame: at last it flew to some woods across the river, where I could not follow. These two instances of the appearance of the great gray shrike in this parish are the only two I know of, although many of the country people seem to know the "butcher bird" perfectly by name.

Spotted Flycatcher.—Very abundant. It arrives here much earlier than any of the other migratory birds.

Dipper.—Local name, the "water crow." Very common along the water-side. I have found as many as three nests containing eggs in one day. One pair of dippers rear their young almost every season under the arch of a bridge which spans the river close to our house; its nest is placed in a hole at least a yard into the masonry. The local anglers here have a great aversion to the "water crow," as they believe that it destroys the trout ova, and accordingly they destroy in turn every nest and eggs they come to; and this is not as regards the dipper alone, for they treat the nest and eggs of the common sand-piper in the same barbarous fashion. It is of no use attempting to prove to them that they are wrong, for they will only shake their heads and say, "May be, may be," and destroy, perhaps purely from habit, the next nest they come to.

Missel Thrush.—Called here, in common with the fieldfare, the "field-flyer" or "felitflyer."

Fieldfare.—Arrives here about the end of October in large flocks, and some seasons remain as late as the middle and end of April.

Song Thrush.—Local name, "mavis."

Redwing, Blackbird, Robin.

Redstart.—Local name, "redtail." Arrives in different seasons, according to my notes from the 20th of April to the 20th of May.

Hedgesparrow.—Local name, "blue sparrow."

Stonechat.—Local name, "stone chacker." Not so common as the whinchat.

Whinchat.

Wheatear.—Common, but local, frequenting large stony fields and moors.

Sedge Warbler.—Sometimes called the "Scotch nightingale." Very abundant. I once took eighteen nests in one day from a piece of marshy ground, over-grown with alder-bushes and bramble, which does not cover more than four acres.

Blackcap.—Also called "Scotch nightingale." Not very common, but breeds regularly.

Whitethroat.

Wood Warbler.—Local names, “white wren” and “smeuth.” I found two nests and eggs in the spring of 1863.

Willow Warbler.—Local names in common with the last species.

Goldencrested Regulus.—Local name, “golden wren.”

Great Tit.—Local name, “ox-eye.”

Blue Tit.—Local name, “blue bonnet.”

Cole Tit.—Local name, “coaly head.”

Marsh Tit.—Very scarce. I have only seen three marsh tits here, one of which I killed.

Longtailed Tit.

Pied Wagtail.—Local name, “water wagtail.”

Gray Wagtail.—Not very plentiful.

Tree Pipit.—Local name, “titlark.”

Meadow Pipit.

Sky Lark.—Local name, “laverock.”

Wood Lark.—I have only taken one nest and eggs of this bird here, but nevertheless I believe it breeds regularly with us.

Blackheaded Bunting.—Local name, “coaly head.”

Yellow Bunting.—Local name, “yite.”

Chaffinch.—Local name, “shilfie.”

Brambling.—Local name, “storm cock.” Never seems to come here in any great numbers. In the winter of 1859-60, when such large flocks came to the neighbourhood of Edinburgh, I only observed three specimens here. In the spring of 1861 I saw a pair of bramblings; they allowed myself and a friend to approach within five yards of them, so we had a good view. We searched long, but vainly, for the nest, and all the time the birds, and especially the female, kept flying around us in an agitated, uneasy manner.

House Sparrow.

Greenfinch.—Local name, “green linnet.”

Siskin.—I have never shot or secured a specimen here, but have seen a few frequenting some alder-bushes in winter.

Goldfinch.—Local name, “goldie.” Very scarce. I knew of one pair breeding here about three years ago, but lately they have disappeared.

Linnet.—Local name, “rose linnet” or “lintie.”

Redpole.—Small flocks in some winters hang about the alder-bushes.

Bullfinch.

Crossbill.—I have never seen the crossbill here myself, but am told on reliable authority that one year they came in considerable numbers.

Starling.

Crow.—Not so abundant as formerly, being kept down, along with the following species, by gamekeepers.

Hooded Crow, Rook, Jackdaw, Magpie.

Jay.—Very scarce. I knew one nest of young jays in 1862, but they were all destroyed, along with the old birds, by gamekeepers.

Creeper, Wren.

Cuckoo.—Arrives with great regularity about the first week of May, and occasionally as early as the middle of April.

Kingfisher.—Local name, "king's fisher." I have repeatedly watched over the breeding-haunts of this beautiful bird, and on two occasions have helped myself to their eggs. One nest I knew was destroyed, along with the parent bird, by the sand-bank in which it was placed slipping down and burying all in a premature grave (Zool. 8954).

Swallow.—In seven years in which I have noted the arrival of the migratory birds I find the swallow stands as follows:—In 1859, on the 22nd of April; in 1860, on the 24th of April; in 1861, on the 12th of April; in 1862, on the 22nd of April; in 1863, on the 18th of April; in 1864, on the 14th of April; and in 1865, on the 10th of April.

Martin.—Not numerous, and every year seeming to become less so.

Sand Martin.

Swift.—Local names, "cran" and "bleak martin."

Nightjar.—Not a very abundant, but a very regular, visitor.

Ring Dove.—Local name, "cushie-doo." I have taken the eggs as late as the 30th of September (Zool. 9113).

Pheasant.

Black Grouse.—In very small numbers.

Red Grouse.—Not abundant: I only know of one spot actually in the parish, where there are perhaps two or three coveys every year.

Partridge.

Golden Plover.—Large flocks attend the ploughed fields in winter, as also the ground occupied by the Falkirk fair or "tryst" at Stennismuir.

Ringed Plover.—I have every reason to believe that this bird breeds in small numbers around Loch Koutre or Colter, as I see them there every spring I go, in company, or at any rate seeming to mingle with the dunlins.

Lapwing.—Local name, "peewit."

Heron.—A few frequent the river every year.

Bittern.—I have seen one stuffed specimen, in a very dilapidated

state, belonging to a man in the village, and which was shot about ten years ago by a man who now occupies the position of gamekeeper on our ground, and on whom I can rely for most information, as he knows something about birds, which cannot be said of most gamekeepers.

Curlew.—Local name, “whaup.”

Whimbrel.—In August, 1860, I killed two specimens of the whimbrel, after a long and somewhat difficult stalk along the bed of a stream. There was a flock or family party of five. A few days afterwards a flock of seven passed over just out of range, and those are the only whimbrels I have ever seen here.

Redshank.—Local. Breeds in small numbers on the shores of Loch Colter.

Common Sandpiper.—Local names, “sand lark” or “sandy lave-rock,” and “the deacon.” The origin of this last name I have tried to discover, but no one seems to be able to assign any reason for it. This bird arrives on our river with great regularity. The five years in which I have taken note of its arrival gives the following dates:—In 1861 it arrived on the 29th of April; in 1862, on the 22nd of April; in 1863, on the 23rd of April; in 1864, on the 12th of April; and in 1865, also on the 12th of April. I have on several occasions seen this bird dive and remain a long time under water, *when wounded*.

Woodcock.—Has bred here, to my own certain knowledge, every year since 1861, included, in greater or less numbers. In 1861, on the 25th of April, I took four eggs, which were in a far-advanced stage of incubation, as the young birds were already covered with down.

Common Snipe.—Considerable numbers come here in winter, as also in the end of July or beginning of August. They breed also in several localities.

Jack Snipe.—A few arrive on our marshes every winter.

Dunlin.—Local name, “pickerell.” Breeds in limited numbers around Loch Colter.

Land Rail.—Local name, “corn craig.” These birds I have frequently killed by imitating their harsh cry, which imitation often allures them to within a few feet of where I stand.

Moorhen.

Water Rail.—Last winter, 1864-65, I procured in this neighbourhood three specimens of the water rail. I am told, on reliable authority, that none had been seen for more than ten years. One of these three specimens was caught on the public road in an exhausted state (Zool. 9468).

Coot.—Not very numerous.

Bernicle Goose.—Only once have I seen a flock of these geese settle here, though frequently I see them passing overhead. Near this, but not in either of the parishes, they come in large flocks, and require to be driven off by the farmers.

Mute Swan.—Common on preserved ponds, &c.

Wild Duck.—More or less numerous, according to the severity of the winter. Very few breed with us.

Teal.

Goldeneye.—A few, especially males, come to the river every year.

Redbreasted Merganser and *Goosander.*—Only occasionally seen.

Little Grebe.—Not frequent.

Gannet.—I have seen a few pass over during stormy weather. One was picked up in an exhausted state in a field in Dunipace parish, after a storm.

Common Tern.—Local name, “sea swallow.” This and the following species I have seen ascending the course of the river in stormy weather, but at other times they seldom make their appearance.

Arctic Tern.—I have shot this and the first-named tern on two different occasions.

Blackheaded Gull.—Comes up frequently from the Frith of Forth, both in mature and immature plumage. Used to breed in small numbers at Loch Colter.

Common Gull, Herring Gull.

Great Blackbacked Gull.—Passes over at a great height in stormy weather.

Lesser Blackbacked Gull.—This, along with most of the above-mentioned gulls, I have seen sailing on the surface or flying around Loch Colter.

Some other species I might add to this list, but as I am not as yet perfectly certain as to their occurrence, I should prefer leaving the list as it is for the present. Amongst these I might mention the kite, buzzard and golden eagle, as having been seen to pass overhead, but the information and the somewhat rough descriptions given by the people of these parts cannot with perfect safety be used as reliable information.

J. A. HARVIE BROWN.

Dunipace, Falkirk, December 13, 1865.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from p. 9802.)

OCTOBER AND NOVEMBER, 1865.

Shorteared Owl.—On several occasions during the last month I have seen these owls in our marsh district. Their usual haunts are the shorn wheat-stubbles, or amongst the long grass and reeds on the banks of the drains. I now very seldom cross the shorn stubbles in the marshes without putting up some of them. To-day (November 30th) I put up one in this situation, and shortly afterwards two more of these birds rose before me from the grass on a drain-bank. They are extremely tame and fearless, often allowing me to approach within a few yards without rising, and, on taking wing, seldom fly far, often not out of gun-shot. My dog has frequently pointed them in these long stubbles: in one instance the owl seemed more inclined to fight than to turn tail; it scarcely rose above the stubble before it perched again on a clod, not more than three yards away, and all the time intently watching the setter, who still remained staunch to his point. I have been informed that several others have lately been seen in this district, and on the 9th, when out shooting in a neighbouring parish, I flushed one in a plot of mangold-wurzel. As they are not likely to be disturbed by roving gunners, I trust they will remain with us during the winter. Some few years since, when crossing a piece of boggy land in this parish, in great part overgrown with rushes, my dog came to a point: on going up five owls rose: one that I fired at fell slightly winged, and, after a violent resistance and a severe scratch or two from his sharp, needle-like claws, was safely stowed away in the net of the game-bag. On reaching home I turned him out into a two-stalled stable, his only companion being an old pointer. For several days I tempted him with small birds, mice, raw beef, &c., but to no purpose; he resolutely refused everything, and I began to despair of ever being able to keep him in confinement. Going into the stable one night with a bull's-eye lantern, I threw the light upon the place where my captive generally sat crouched in the straw under the crib, but no owl was there: on looking into the other stall I was astonished to see him up to his thighs in the dog-pan, coolly helping himself to the dog's supper, while his four-footed companion looked down with evident satisfaction at his strange comrade. From this time he threw away all shyness, and ran into the opposite extreme: every evening he was regularly

supplied with three sparrows, and occasionally one or two during the day, sometimes varied by a young rat. I invariably found everything eaten up by morning; sometimes the heads were left, but this was not always the case. The fatter he grew the fiercer and more combative he became, and I never succeeded in any degree in taming him or making him acknowledge his protector. It was extraordinary, however, to see the friendship which sprang up between the pointer and owl. On anybody entering the stable the bird would jump away, and place himself close to his friend "Don," not unfrequently ensconcing himself between the dog's fore legs, snapping and hissing at every one that approached, and evidently to the great delight of his friend, who frequently looked down upon him with the utmost complacency. Requiring the stable I had him removed into a large granary: here during the day he generally sat *perched* on the edge of an old corn-screen, which was placed away on a rafter near the roof. I fancied his appetite had decreased with this change of abode, as on several occasions I found the sparrows, with which he had been supplied the previous evening, untouched, but this was soon accounted for by finding the skins and bones of mice amongst the castings; he had commenced foraging on his own account. Shortly afterwards, his wing having quite healed, he one dark morning, much to my regret, escaped through the door, and I never saw him again.

Hooded Crow.—October 7. Observed, for the first time this season, a party of hooded crows in the marshes. I am informed some were seen in the neighbourhood on the 30th of last month. This is, however, early for them to appear.

Peewit.—During October and November we have had immense flocks of peewits on the lowlands and marshes, equal to, if not greater than, the large flights of these birds which visited this district in the autumn preceding the severe winter of 1860-61. Like the golden plover, during wet and showery weather they are wild and restless, constantly on the wing, passing and repassing, often at an immense height, over the marshes.

Gray Plover.—October 25. Some few solitary birds seen on the fore shore. One I procured greatly resembled a golden plover in winter plumage; the upper parts darkish brown, with the edges and markings on the feathers the golden colour seen in *Charadrius pluvialis*. The under parts white; the rudimentary hallux and black axillary feathers at once determining the species.

Golden Plover.—November 4. Saw the first flock of golden plovers.

Very few of these birds have as yet (November 30th) arrived in this district.

Knot.—November 4. This evening, shortly before sunset, I witnessed a most extraordinary gathering of knots on the Humber flats. When at some distance from the bank I was attracted by the noise made in their occasional short flights along the coast; the roar, or rather rush, made by their wings in flight reminding me, more than anything else, of the noise made by a mighty host of starlings when settling down for the night. On cautiously peering over the embankment a beautiful and very striking scene met my gaze. The tide was coming in, and from three to four hundred yards of the flats were still uncovered: in the west the sun was going down in a blaze of glory, and the usually gray and dreary mud plains had borrowed the gorgeous colours of sunset—they were purple with reflected light—while beyond, the great river in all its tranquillity, and almost unbroken by a ripple, was barred and streaked with purple, gold and crimson. Thousands and thousands of knots were massed together on the fore shore; here crowded as closely as they could sit, then again straggling out into a more open line, and then again massed together by thousands. Some hundreds of yards in length and about thirty in breadth, along the edges of the water, were fairly crowded with them. One part or other of this great congregation was almost constantly on the wing, flying over the heads of those sitting, and then settling again. All the time they kept up what I may almost call a continual warbling: the blended notes of so many birds was so completely unlike the usual sharp cry of the knot that at first I could scarcely believe it came from that species: it more approached what would be the twittering of a countless flock of linnets. Shortly before sunset the flock rose, taking a course directly across the Humber: they did not all rise together, but commencing at one extremity gradually took flight; when all on the wing their appearance was that of an immense dark undulating line of smoke from the funnel of a steamboat.

Blackbird.—November 4. I heard, as I returned home this evening across the marshes, a blackbird in full song; the notes came from a solitary hawthorn, the only bush or tree within some distance. On looking at my watch it was just 5.10, and was so dark at the time that objects were not clearly discernible fifty yards away.

Wild Geese.—November 7. Examined two wild geese shot on the Humber; one was a bean goose, the other a fine specimen of the now rare graylag (*Anser ferus*).

Gray Wagtail.—November 10. Saw the first gray wagtail.

Snow Bunting.—Have lately seen several flocks of these lively, restless buntings in the marshes, and remarked that they contain many more of the full-plumaged adult males than is usually the case.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
December 1, 1865.

Ornithological Notes from Shropshire. By JOHN ROCKE, Esq.

(Continued from page 9782.)

Green Woodpecker (*Picus viridis*).—Shy and retiring in its habits, this handsome bird is usually found in our parks and woods, where the oak and its varied companions have arrived at full maturity. Occasionally I am gratified by a slight contemplation of its lovely hues on my lawn, attracted for the moment by some insect-life to us unseen. I consider it a common bird, and I trust it may be long before the ruthless hand of destruction will have accomplished the extermination of this, one of the most interesting of our constant residents.

Great Spotted Woodpecker (*Picus major*).—Much more rare than the preceding bird, though a good many are to be found in this county. They also breed pretty regularly with us. I knew of a nest last year in a tree on the banks of the Clun, which I trust came to maturity.

Lesser Spotted Woodpecker (*Picus minor*).—This most interesting little woodpecker was very abundant here this summer. I knew of three or four pairs within a radius of less than two miles of this house. They are usually considered very rare birds, though I think this arises in a great measure from their being so easily overlooked. Were it not for the singular noise they make whilst in search of their food, I believe this would be the case much oftener than it is. Though I watched them a great deal this season, I failed to discover exactly the way in which that noise is produced: I think a succession of rapid strokes with the bill must be the cause, though one is astounded at such a result being the efforts of so small a bird: it is very like rending a large tree in twain, and can be distinctly heard at a very considerable distance. I called the attention of a friend to it one day this spring, and, although a very good naturalist, he was quite at a loss to account for the noise, and was still more surprised when, after we had walked a good half-mile, I pointed out to him the little bird, in an ancient

willow-tree, which was the cause of it all. The nest is generally very difficult to discover. I was fortunate in finding one, a few years ago, in a decayed alder-tree. A starling had taken possession of the upper portion of the limb, and a little below, in another hole, was the so-called "nest" of the little woodpecker, containing five beautiful pink eggs. I shot the mother, and made the best atonement I could by placing her in my museum.

Wryneck (*Yunx torquilla*).—Not at all an uncommon bird, though one that usually attracts little attention, except from its peculiar cry, which much resembles that of some of the smaller hawks. It is welcomed as the forerunner of the cuckoo, and is well known, I believe, in most counties by the appellation of "cuckoo's mate."

Common Creeper (*Certhia familiaris*).—Another of the most beautiful and interesting of our residents. I have for two or three years in succession watched a pair engaged in the process of making their nest, in an arbour constructed externally of small upright larch-poles, and lined with boards and matting. Without exhibiting the slightest fear of mankind, everything is carried on with a sort of mouse-like cunning: an aperture is selected between two poles, sufficient to admit the bird, and the nest is constructed some little distance below, safe from the weather, and almost concealed from observation. Here the brood was hatched and carefully tended by the parents, in the same noiseless stealthy manner, until on a certain day some tiny heads began to show themselves: this seemed to be the prelude to a general departure, for very shortly afterwards each little occupant was seen to wriggle itself upwards until it had gained a footing, and at once to take to flight.

Wren (*Troglodytes vulgaris*).—Beautiful in its simplicity, this little bird is an universal favourite. Summer and winter it haunts our gardens and dwellings, enlivening us at intervals with its voice,—wondrously powerful for so tiny a frame,—and choosing the most marvellous spots wherein to build its beautiful nest, even to the interior of the dried-up body of a scare-crow rook.

Hoopoe (*Upupa epops*).—This singular and very handsome wanderer has been frequently seen and obtained in the county. There are two specimens in Lord Hill's collection, killed at Acton Reynold. The late Mr. Slaney saw the bird at Walford Manor. Mr. Eyton mentions one killed at the Black Birches. My friend Mr. Herbert Crawshay pursued one unsuccessfully near Burrington Pool, on the Downton Castle Estate, and I saw a good example last year, obtained near Oswestry.

Nuthatch (*Sitta europæa*).—Very common in this neighbourhood, where orchards abound. If tempted with nuts or crusts of bread placed on the window-sill, it is astonishing how tame they soon become, appearing every morning with the greatest regularity, and carrying off the looked-for morsel almost from the hand that dispenses it.

Cuckoo (*Cuculus canorus*).—Exceedingly numerous here this summer, though I was not sufficiently fortunate to discover any of their eggs. I saw young birds after they had left the nest, and heard of one, not far from the house, actually in the nest, but it was gone before I could see it. Five or six of these birds seemed to have attached themselves to the flower-garden the whole summer, and I should say neither slumbered nor slept; from long before midnight till dawn one incessant jargon seemed to be carried on by the whole company. They appear in this part every spring with the greatest regularity, Orleton Fair, which usually falls on or about the 24th of April, being the day on which we look for them, and they are, generally speaking, true to a day.

Kingfisher (*Alcedo ispida*).—Oh! that I could enlist the ladies on my side, in order to put a stop to the wholesale destruction of this, the most beautiful, as well as the most interesting, of our native birds. Surely the tropics, if bright colours are indispensable, would supply their wants, and we might still be gratified, when wandering along the margin of the purling brook, with the occasional glimpse of a bird, the beauty of which few who have not seen it on the wing can appreciate.

Swallow (*Hirundo rustica*), *Martin* (*H. urbica*), *Sand Martin* (*H. riparia*) and *Swift* (*Cypselus apus*).—These four summer visitants are all very abundant. The little sand martin is the first to appear, and is speedily followed by the swallow and martin. The swift arrives considerably later. I should advise any one in search of the eggs of the sand martin to beware of fleas; I have seen them this summer, before the birds had begun to sit regularly, congregated in positive heaps in front of the holes: what must be the sufferings of the young birds I am at a loss to conceive.

Nightjar (*Caprimulgus europæus*).—Very common in many parts of the county, and I should say pretty evenly distributed over it. I often see them on our moor-lands and in the young plantations which cultivation has added to them. They breed regularly, and in considerable numbers, on the confines of Hawkstone Park.

Ring Dove (*Columba palumbus*).—An exceedingly common and very destructive bird; in fact, the attention of our agriculturists will have to be directed towards keeping this bird within bounds, as in places where they appear, as they do about here, in large flocks, I consider the damage caused by them to the root-crops and young clovers to be greatly in excess of that done by the much-persecuted “coneys.”

Stock Dove (*Columba ænas*).—Another very common bird in this county. I seldom see a large flight of so-called “wood pigeons” without several of these birds being mixed up with them. They are easily recognized by their short blunt appearance. I am not aware of the true rock dove ever having been met with in Shropshire, though I know it has the credit of belonging to us. As the stock dove is generally designated by gamekeepers and others as the “blue rock,” this has, in all probability led to the error.

Turtle Dove (*Columba turtur*).—Plentiful in this county, where it takes its provincial name of the “Wrekin dove,” from the celebrated Shropshire hill. They were peculiarly abundant this summer in this district, and I knew of a great many nests. About August they congregate in considerable flocks in the fields, like the ring dove; I have seen fifteen or twenty at one time upon the wing.

Sand Grouse (*Syrhaptes paradoxus*).—I gather from Mr. Alfred Newton's most excellent account of this bird, published in the ‘Ibis,’ that Shropshire can boast of having been visited by the largest flock of these mysterious strangers recorded in England during the late irruption. Two were killed at Oswestry from nearly one hundred birds. I was informed of the capture of these specimens, but was not at all aware that they had appeared there in such astonishing numbers. A flock of eighteen were also mentioned, in the ‘Field,’ as having occurred near Ludlow. I much regret that I never was able to meet with any of these most interesting invaders, nor have I been able to obtain even a stuffed example of them.

Common Pheasant (*Phasianus colchicus*).—The rearing of pheasants by hand has of late years been carried to such an extent that one begins to look upon them more in the light of poultry than of wild birds; and the numerous foreign crosses resorted to have almost entirely destroyed the original character and markings of the bird.

Black Grouse (*Tetrao tetrix*).—Numerous in many parts of the county; the Black Hill, the Longmynd and Clun Forest produce them in considerable abundance. The Brown Clee Hill, as well as

Titterstone, occasionally boast of one or two broods, and I have known them to be on the High Vinealls above Ludlow, also on Stow Hill, near Knighton. Most of the Radnorshire hills are frequented by them in tolerable numbers.

Red Grouse (*Lagopus scoticus*).—Common on the Longmynd and on Clun Forest. Cultivation has driven them from the Black Hill, where they formerly found a dwelling-place. They still thrive in considerable numbers on the Beacon Hill, in Radnorshire, and increase largely as the interior of North Wales is approached.

Common Partridge (*Perdix cinerea*).—Very abundant this season. A dry summer and the vermin kept under seems all that is necessary for the production of this useful bird in almost any quantity.

Quail (*Coturnix vulgaris*).—By no means common, although I am informed that they occasionally breed in the sandy districts around Shiffnal. I saw one here in a turnip-field on the 9th of last September, which was twice shot at, but was not obtained. Since that date I have seen and heard of three or four more that were met with in the county. Still they are uncertain visitants, and I consider them very rare. I do not remember having seen the bird in this parish for nearly twenty years previously to the one recorded in September last.

Great Plover (*Ædicnemus crepitans*).—I only know of one specimen, killed on Ponsart Hill, a few years ago, by Mr. Charles Vaughan.

Golden Plover (*Charadrius pluvialis*).—Occasionally met with on the Longmynd and other high grounds. Mr. Eyton mentions the hills above Chirk Castle as a locality where they breed, but I do not think the bird is common anywhere in this county.

Dotterell (*Charadrius morinellus*).—Still more rare than the preceding bird, though they have been known to frequent the Longmynd. I have seen a specimen in the collection of the late Mr. Pinches, obtained from that locality.

Peewit or Lapwing (*Vanellus cristatus*).—Very numerous in many parts, and remains the whole year. I have observed their numbers to be greatly increased as spring approaches, and they are then generally congregated in large flocks before the period of nesting commences.

Turnstone (*Streptilas interpres*).—Has occurred two or three times, but is very rarely met with so far inland.

Oystercatcher (*Hæmatopus ostralegus*).—Occasional.

Heron (*Ardea cinerea*).—The facilities afforded by railways for the transport of our large oak woods have reduced the breeding-places

of this fine bird; still they are to be found in considerable numbers wherever they are protected; and I believe some heronries exist in the county. The decoy at Oakly Park forms a sanctuary for them, and they often abound there. I have frequently reared these birds from the nest, and most interesting and amusing pets they are; tame to a degree, they seem to place the most utter confidence in man. Unfortunately, from my close proximity to a river, I have never been able to prevent them straying, and sharing the usual fate of all pets. It is astonishing the amount of fish they will consume, if regularly supplied; their digestion seems as rapid as their appetite is insatiable. By constant examining, I have had a male bird that, at four months old, exhibited the long pendant crest and beautiful fibrous hackles usually only found on the adult bird.

Squacco Heron (*Ardea cornuta*).—This rare and beautiful little heron was killed some years ago at Bockleton, under the Brown Clee Hill; it was shot at the pool by Mr. John Patrick, and by him presented to Mr. George Henry Dansey, of Ludlow, in whose possession it remained until his death. It was stuffed by Mr. Ambrose Grounds, of that town. I believe it was a male bird, and was in very fine plumage.

Bittern (*Botaurus stellaris*).—Few winters pass without a certain number of these birds being sent in for preservation. I possess two singularly fine specimens, one killed at Ellesmere, the other obtained in January, 1864, in a garden in the village of Bromfield, where it had been seen for some days previously. It was kindly presented to me by Lady Mary Windsor Clive, and is certainly one of the most richly-marked birds I ever saw.

Night Heron (*Nycticorax Gardeni*).—I am only aware of one specimen ever having been killed in Shropshire: it was in immature plumage, and belonged to the late Mr. Stanier, of Wroxeter.

Glossy Ibis (*Ibis falcinellus*).—In 1864 two very fine specimens of this rare bird were killed near Shrewsbury; one of them was preserved by Mr. Franklin, of that town; the other, which fell to the gun of the Sundorne keeper, was thrown away and never heard of till it was in too high a state of decomposition to be of any use.

Common Curlew (*Numenius arquata*).—Occurs at Whixall Moss, where I believe it breeds; it is also found in considerable numbers on Clun Forest, the Longmynd, and most of the Radnorshire hills. I spent a pleasant day on Clun Forest the beginning of last May, in

the hope of finding the eggs of this bird; unfortunately the day was rather wet and foggy, which prevented me seeing any great distance, and these birds are so wary that their nest is at all times difficult to discover. I saw plenty of birds, but think they had scarcely begun to lay: I failed to discover their eggs, but was amply repaid, in seeing on that fine wild expanse of hill, almost in one view, the raven, black and red grouse, lapwings, curlews, snipe, and a great number of our larks and smaller birds. Another season I trust I shall be more successful, and am also in hopes that I shall discover the whimbrel breeding in that locality.

Whimbrel (*Numenius phaeopus*).—Several specimens have been met with in this county, but it is my present opinion that it is much more rare than the curlew.

Redshank (*Totanus calidris*).—Occasionally met with, but by no means common.

Green Sandpiper (*Totanus ochropus*).—Frequently obtained, and at almost every season of the year. Mr. Henry Shaw informs me that, whilst fishing in Condover Brook one day the summer before last, he came upon a pair of these birds, which, from their actions, had evidently a nest somewhere near. He searched the rushes and rank herbage by the side of the stream, but of course in vain: had he known at that time that the most probable locality was in the deserted nest of a crow, he might have had the great satisfaction of adding this bird to the list of those that breed in the county.

Common Sandpiper (*Totanus hypoleucos*).—Very common on the River Teme near Leintwardine, from which locality I have often obtained the eggs. It arrives early in April, and appears to be pretty generally distributed over the various rivers and streams in the county.

Greenshank (*Totanus glottis*).—I have met with this bird on two or three occasions, always in the autumn. I saw one fly up from a small pond last August. It is usually very wild and difficult to approach, and exceedingly strong on the wing, mounting up to a great height in the air when disturbed.

Blacktailed Godwit (*Limosa melanura*).—Not often met with so far inland, and has rarely been obtained in this county.

Bartailed Godwit (*Limosa rufa*).—Much oftener met with than the preceding bird. It has been killed several times in Shropshire. Lord Hill has a good specimen in his collection, of a male bird in winter plumage, killed at the Twemlows.

Ruff (*Machetes pugnax*).—The only specimen I know of is in the possession of Mr. Franklin, of Shrewsbury. It is an immature male in winter plumage.

Woodcock (*Scolopax rusticola*).—Appeared very early this season; I knew of several killed in the first week of October. These birds vary greatly in their numbers, which I think are visibly on the decrease. There are several recent instances of their having bred in this county.

Great Snipe (*Scolopax major*).—A fine specimen was killed at Eaton by the late Mr. Pinches, of Ticklerton, and there are many other instances of its capture on record.

Common Snipe (*Scolopax gallinago*).—I fear drainage and a better state of cultivation has driven this bird from most of its former haunts; except by the river-side, its appearance is now very rare. It still continues to breed on Clun Forest and many of the Radnorshire hills. I saw several on the forest this summer, and had the gratification of hearing that peculiar “bleating” which only occurs during the period of nesting. I have a snipe in my collection, taken from a lot in a fishmonger’s shop in Shrewsbury, which has puzzled me and many others who have seen it. The bird is fully one-third larger than the usual common snipe; the buff markings on the back and scapulars are very broad and richly coloured, and the beak is very much longer than others with which I have compared it. Can we have two sorts of snipe in this country, or are there occasionally “giants in the land?”

Jack Snipe (*Scolopax gallinula*).—At no time very common, but now rarely met with.

Curlew Sandpiper (*Tringa subarquata*).—One specimen in the collection of Mr. Eyton, killed on the old race-course near Shrewsbury.

Knot (*Tringa Canutus*).—Not unfrequently met with, and usually in the summer plumage.

Little Stint (*Tringa minuta*).—I give the occurrence of this bird on the authority of a very respectable farmer, who informs me that he saw a flock of them last winter on the River Teme, numbering some twenty or more birds; he killed six or seven of them at one shot, and, imagining that they were common, and that I had the bird, they were eaten. I am rather cautious of advancing this fact, not having seen any of the birds, but I know of nothing else to which I can refer them. I do not think they were dunlins, as they were represented to

me as being much smaller than that bird. If correct, it is the first time I ever heard of their occurrence in these parts.

Schinz's Sandpiper (*Tringa Schinzii*).—One specimen, killed some years ago on Stoke Heath; in Lord Hill's collection.

Dunlin (*Tringa variabilis*).—Occasionally met with, but uncommon. One example was killed by the late Mr. Pinches, at Ticklerton.

Purple Sandpiper (*Tringa maritima*).—Occasional, but very rare.

Gray Phalarope (*Phalaropus lobatus*).—Has frequently been obtained. I possess specimens killed at Condover and at Clungunford. It has also occurred at Montford Bridge and in many other localities.

Land Rail (*Crex pratensis*).—Very numerous this summer: I knew of two nests in one clover-field on my farm.

Spotted Crake (*Crex porzana*).—Often obtained on the banks of the Severn and in the neighbourhood of Shrewsbury. I do not remember its occurrence more than once or twice in this district, but it is a bird that is easily overlooked.

Water Rail (*Rallus aquaticus*).—Not uncommon, but more frequently met with in winter than at other times.

Moorhen (*Gallinula chloropus*).—Common on every river, pond and brook in the county.

Coot (*Fulica atra*).—Few people are aware of the great beauty of the young of this bird when first hatched. Having opportunities of seeing them very often when just leaving the shell, I can fully bear testimony to the correctness of Mr. Wolf's beautiful drawing in the 'Birds of Great Britain.'

JOHN ROCKE.

Clungunford House, Shropshire,
October 31, 1865.

(To be continued.)

Ornithological Notes from Norfolk, during October, November and December, 1865. By HENRY STEVENSON, Esq.

(Continued from Zool. 9808.)

October 7. A fine redthroated diver, in full breeding plumage, killed off the mouth of the Yare, and a fine old gannet, near Holt, probably

driven inland by stormy weather. I have since had the pleasure of examining no less than five redthroated divers in nearly full summer plumage, killed at Cromer, Hickling and Yarmouth, between the 5th and 16th of October: of these the most perfect bird, though killed later than the others (16th), had the gular patch quite pure, and only a few white feathers near the base of the bill, on one side, indicated a state of change: the back in this bird had no spots of any kind, but was of one even cinereous tint. The rest exhibited more or less white in the cheeks, and a few white feathers appearing in the red patch, but were still in beautiful plumage. The one most forward in change, though killed two days earlier than some of them, had the red patch thickly sprinkled with white feathers, and the back and shoulders much spotted. Do not the oldest birds change latest, and are not the spots on the back and shoulders lost altogether in adult specimens?

About the same date an immature Slavonian grebe was shot at Horning, and a few ring ouzels, brought in to our bird-preservers, indicated their usual autumnal passage.

About the 18th a fine osprey frequented Hoveton Broad for two or three days, but though his life was attempted more than once, I am happy to say he passed on in safety.

Shorteared owls appear to have been more than usually plentiful this autumn, and consequently many have been shot by sportsmen in the turnip-fields: more than a dozen specimens have been brought to one bird-stuffer in this city.

About the middle of October a young skua, resembling, I am told, for I did not see the bird, an immature Buffon's skua in the Norwich Museum, was obtained in this neighbourhood; and on the 1st of November a fine adult pomarine skua, and on the 10th an immature Richardson's skua, were procured on the coast, and sent to Norwich for preservation. The occurrence of these birds, together with divers, gannets, &c., in unusual numbers this autumn, is fully accounted for by the extraordinary shoals of herrings which have visited our shores, and proved a source of very considerable profit to our fishing population.

On the 28th of October an immature purple heron, a rare visitant to this county, was purchased in our fish-market, having been killed on Ludham Broad: it proved, on dissection, to be a male, a bird of the year, and weighed two pounds three ounces: the stomach contained merely a dry pellet of mouse-hair.

Several fine bitterns have also been shot on the broads during their usual autumnal migration.

November 11. A young male hen harrier and (about the same time) a roughlegged buzzard, immature, from Smallburgh. Mr. F. Hele, in the 'Field' of the 11th of November, states that five of these fine birds were killed at Aldborough, on the Suffolk coast, during the previous fortnight.

About this date three or four great spotted woodpeckers, killed in different parts of the county, and two quails, a young bird and an old female, near Cromer.

November 19. Another immature roughlegged buzzard and two more great spotted woodpeckers, sent into Norwich for preservation; also a fine adult red male sparrowhawk, not often met with at the present day.

November 23. Two adult male shovellers and one female, and a fine bittern, from Ludham Broad.

December 2. A curious pied missel thrush was shot near Norwich, having the head and neck all round a somewhat dirty white, with white feathers in the wing-coverts, scapulars and lower part of the back: the whole of the rest of the plumage lighter than usual.

December 5. Another bittern and an immature great northern diver, sent to Norwich to be stuffed; about the same time also a fine young male peregrine was killed at Hempstead, near Holt, shot in the very act of chasing a wild duck.

December 15. Another redthroated diver, but evidently a young bird: the beak small, no traces whatever of summer plumage, back and shoulders much spotted with white, and the feathers of the head and neck of a particularly downy texture.

December 22. An immature common buzzard, killed at Bradfield, near North Walsham, and at the same date a fine young female peregrine. On the 22nd a young female merlin at Hethersett, and on the 30th or 31st a splendid old male kite was shot at Martham, near Yarmouth. This bird is now extremely rare in Norfolk; indeed, the last obtained, to my knowledge, in this county was trapped near Thetford, in 1852. A large hawk, supposed to be of this species from its forked tail and circling flight, had been seen on the Suffolk coast near Lowestoft, about a week or so before, and is most probably the same now recorded from Martham. The stomach contained only a few dark feathers resembling coot's or scoter's, with a few fragments of the common reed.

I am also told that about the last week in December a sea eagle was shot at Winlaton, near Yarmouth, and sent to London for preservation.

HENRY STEVENSON.

Norwich, January, 1866.

Ornithological Notes from West Sussex.

By W. JEFFERY, jun., Esq.

(Continued from Zool. 9810.)

OCTOBER, 1865.

Lesser Redpole.—First heard on the 10th; tolerably common throughout the month, but not many seen in November.

Black, Lesser and Common Tern.—Two specimens of the black tern shot on the coast in October, one on the 9th, the other on the 18th; a lesser tern on the 11th; and two common terns on the 11th and 31st of October.

Common Scoter.—A male of this species was shot on the 8th in a tide-mill pond at Sidlesham. The gizzard contained small marine univalve shells.

Gray Phalarope.—Obtained a gray phalarope from Sidlesham on the 13th, and on the 14th I saw another in Sidlesham mill-pond, near some ducks; it was nearly dark at the time, but I watched it preening its feathers for several minutes. The next day one was shot near the same place, probably the same bird; and one or two others have been shot in the neighbourhood during the month.

Peewit.—Saw a large flock of peewits high in the air, and travelling in a southerly direction, on the 22nd. This is the first large flock I have seen this autumn.

Purple Sandpiper.—The purple sandpiper appears to have been met with in greater numbers than usual this autumn on the south coast. I have hitherto considered it a rare species in Sussex until this year, having met with two specimens only during the last five or six years, viz. November 16, 1861, and October 28, 1862. This year I obtained one on the 31st of October, and in the early part of November five others were killed at Pagham Harbour. Mr. Wells, of Worthing, had seven brought him to be stuffed on the 2nd of November (see 'Field' of November 25th); and Mr. John Dutton, of Eastbourne, has informed me of three having been obtained by him on the 31st of

October; he will probably record the occurrence of these in the 'Zoologist,' with particulars. Mr. J. Gatcombe writes from Plymouth ('Field,' November 25), "During the last two months they have been unusually abundant."

NOVEMBER, 1865.

Fieldfare and Redwing.—Heard a fieldfare on the 2nd; none seen or heard since. Redwings heard a week or two earlier, but have been scarce.

Shorteared Owl.—First seen on the 2nd. Several killed in the early part of the month.

Spotted Crake.—A specimen of the spotted crake was shot in the neighbourhood of Chichester about the 1st.

Siskin.—Saw some on the 11th, feeding on the seeds of the alder. The siskin is much more rare than the lesser redpole.

Redthroated Diver.—Two seen on the 14th; not yet numerous.

Snow Bunting.—A specimen was killed at Selsey about the 12th: this specimen was in the winter plumage, with the crown of the head brown, as are the greater part of the Sussex-killed birds. Mr. Wells, of Worthing, also had three brought him to be stuffed on the 1st of November ('Field' of November 25).

Longeared Owl.—First seen on the 22nd. The longeared owl used to breed in this neighbourhood, and perhaps does occasionally now, but it is more frequently met with at this time of year than in the summer. Possibly there is a migration southwards in the autumn. On the 4th of March, 1860, I found ten in one yew-tree on our downs, and a fortnight later four or five near the same place.

Leach's Petrel.—On or about the 25th a specimen of the forktailed petrel (*Thalassidroma Leachii*) was picked up dead at Sidlesham, and is now in my collection. On the 29th I had another brought me which had been shot near the same place. I have also seen a third, which was shot about the 26th or 27th; and a fourth was picked up dead. Captain Knox has remarked, in his 'Systematic Catalogue of the Birds of Sussex,' that whenever this species has been obtained in Sussex it has been almost invariably after south-westerly storms; and such is the present case,—we have had a continuation of storms from that quarter of late.

Migration of Birds.—"What becomes of these flocks? Where do they—where can they halt? If not migrating, how comes it that these autumnal flights are invariably to the eastward?" Captain Hadfield

has suggested (Zool. 9844) that I, being in the "line of flight," may possibly enlighten the readers of the 'Zoologist' with regard to the above queries respecting the migration of swallows, &c. Now, although I may be said to live on the south coast, I have seldom noticed this easterly flight spoken of by Captain Hadfield, yet I have no doubt that it takes place every autumn, but I believe it to be confined to the line of coast or nearly so, and as I live seven or eight miles, in a straight line, from the sea,—and, moreover, in about the widest part of that flat tract of land which lies between the hills and the sea,—it will be perceived that I am not exactly in the line of that easterly flight. Nearly all the flocks of small birds (wagtails, pipits, linnets, &c.), which pass here in the autumn seem to be working their way towards the coast. If Captain Hadfield has the opportunity of referring to a small work entitled 'Ornithological Rambles in Sussex,' by Mr. A. E. Knox, in Letter 7, commencing p. 75, he will find some interesting notes on "The periodical transit of flocks of small birds through the county." At page 81 will be found the following paragraph respecting the goldfinch, but which I think may be applied to many other species, swallows included:—"Goldfinches again become numerous in October, when detached parties, including the young of the year, which have been spread through other portions of the island during the summer, draw towards the sea, and pass eastward in succession, until they find—in some part of Kent, as I imagine—a favourable spot for crossing the Channel." I have not written this as answering Captain Hadfield's queries, but rather to show that I cannot answer them, and I think it will be generally admitted that we are still much in the dark respecting this interesting subject, the migration of birds.

W. JEFFERY, JUN.

Ratham, Chichester, December 7, 1865.

Ornithological Notes from South-East Essex.

By W. VINCENT LEGGE, Esq.

NOVEMBER, 1865.

This part of the Essex coast is of that flat muddy nature which is just suited to the habits of many of the Grallatores. The ground is lower than high-water mark, and consists of pasture and stubble-lands, protected from the sea by embankments, between which and ordinary high-

water mark are wastes of clay soil, called "Saltings," immersed at high "springs," and covered with rank herbage. The shore is bounded by an enormous extent of muddy sand, some twenty-five miles in length, and which stretches out to sea for four or five miles at low water. That part of this flat which lies near the shore is of a muddy nature, covered in many places by a green weed. Near Tillingham this is a great resort of hundreds of ducks and geese, and on most parts of it thousands of waders and sea-birds may be seen feeding every day during the winter. While the gulls fish with the receding tide, the waders confine themselves to these "black grounds." The large island of Foulness is backed by a perfect puzzle of smaller islands, embanked and each surrounded by a creek some three or four hundred yards wide at high water, though many of them are nearly dry when the tide has ebbed. These creeks, the bottom of which is mud, form another good feeding-ground.

Among the following notes are some trifling observations on some of the more common sorts of *Grallatores* frequenting the coast.

Gray Crow.—The first gray crows I observed this winter were on the 28th of October; but further up the coast they were to be seen, I should say, at a much earlier date. They are now pretty plentiful, frequenting grass-lands, called "saltings," between the embankments and the water.

Snow Bunting.—Several examples of the snow bunting have occurred here during the past week. It is rather an unusual occurrence, as the weather has been rather mild, and these birds are generally found here only in the severe weather, in the depth of winter. Three were seen in a stubble-field, consorting with sky larks; one of them was shot and brought to me; it was a male, in winter plumage. Another was killed the day before.

Turnstone.—This handsome bird is not very common, I believe, on these sands. The shore is of a muddy nature, and does not suit their habits. Punctual to their time of arrival, however, small flocks of young birds appeared on this coast during the last week in August and first days of September. They confined themselves to the shingle, and were not very shy. Several specimens were shot, all young birds. They stayed about a week, and then disappeared, moving, most probably, to the south coast. I have not observed any since, but I hope to ascertain during the winter whether many do frequent the extensive sands of this coast.

Sanderling.—Several of these birds frequented the beach at the same time as the turnstones, with which they consorted; one was shot in intermediate plumage, more inclining, however, to that of winter than of summer. They do not seem to be common here.

Ringed Dotterell.—I see small flocks of these birds on the beach, generally at day-break in the morning, or in the evening. They remain on the beach, it appears, most of the night, and feed very early in the morning. I have shot several specimens during the last few weeks, most of which have been females. I first observed their arrival at the end of September. When roused early in the morning, if the tide is in, they get up by twos and threes, as they have been roosting during the night, and after some time, if further disturbed, they pack into a flock, and generally fly away some distance. Morris gives the length of the ringed dotterell as $7\frac{1}{2}$ inches: I have shot one or two 8 inches in length. They are at present enormously fat.

Redshank.—Redshanks are very numerous, and have been so since the beginning of September. There are a good many to be seen in localities near here during the summer months, as they stay to breed. There is one spot in Canvey Island, a marsh, where some few nest, and I have no doubt some do so in one place or the other every year. Their nests are very difficult to find: on approaching them the old birds become very noisy, flying round and round, screaming incessantly; on alighting they stand still at first, and have a habit of jerking back their heads. They entirely frequent the salt-water creeks surrounding the islands at Foulness, feeding on the muddy banks of these, when left bare by the ebbing tide. During high water they seem to be ever on the wing, and, assembling in little flocks, sweep over the surface of the water and over the low lands in a manner which reminds one of the little flocks of swifts which one sees sweeping through a town. They roost with us on the saltings, and become very noisy and unsettled before retiring to rest.

Dunlin.—These sandpipers arrived here at the end of August. I was away at the beginning of September, but on my return I found them already pretty numerous. They have been increasing steadily since then, and have now attained to the vast numbers which frequent the coast always in the winter. They go much in company with small flocks of dotterells. Specimens I shot on the 7th of October were in intermediate plumage; some killed a fortnight later had quite assumed their winter dress. They feed mostly on the mud flats of the coast, which are bare at low water. On approaching a flock of these birds,

single individuals first take wing, and then the whole mass rise up together. They roost, like the dotterells, on the beach, settling down above high-water mark, and are very shy at night, getting up at the least sound of footsteps. I have found them on the flats when out before daybreak in the morning, so it would appear that they feed to some extent during the night. At high water they pack in vast flocks, sometimes mounting high in the air, driving about like a small cloud with the wind; at other times sweeping over the fields in their impetuous course. They are down upon you in an instant with a rushing noise, displaying perhaps the white of their under surface, and then changing in the twinkling of an eye into a dark mass, as they wheel off in some other direction. The provincial name for the dunlin in these parts is "ox-bird."

Heron.—The nearest heronries to this part of Essex are those of Wanstead Park and Chilham Castle, in Kent, so that it may be presumed that the numbers we have here in the marshes come from these two colonies. While out shooting some time ago I put up twenty-five at once. This was at high water, when they are to be found very often together on the saltings. They are fond of the salt-water creeks, which are so extensively patronized by the redshanks, and especially of those devoted to oyster culture, where they make, I expect, some capital meals.

Curlew.—Great numbers of curlews feed on the flats, in company with godwits, dunlins and sea gulls. They generally are the first to alight on those parts just laid bare by the falling tide. I have never seen them so plentiful anywhere in England as they are here; but notwithstanding their great numbers very few are shot. They are so excessively wary, and the coast is so open, that it is next to impossible to get near them.

Martin.—Both the swallow and the martin are very plentiful here in summer, especially, however, the latter, seven or eight of whose nests I have seen together on one house front. The swallow breeds near Shoebury to a great extent, under the bridges over the water-courses in the marshes. The last swallow I observed was on the 5th of November, but the martins left sooner, on the 30th of October. I saw, however, to my surprise, a couple of sand martins on the 18th of November.

W. VINCENT LEGGE.

South Shoebury, November 20, 1865.

Ornithological Notes from the County Dublin.

By H. BLAKE-KNOX, Esq.

OCTOBER AND NOVEMBER, 1865.

Redthroated Diver.—The redthroated diver appeared here early in October in fair numbers. A young bird, shot in the early part of the month, was similar to young birds shot throughout the winters of former years; the speckles on the throat are, however, deeper and more plentiful than in December or January. A very old adult, shot on the 20th of October, was in full winter plumage. The snow-white cheeks and throat, at this season, tells the adult from the young of the year, whilst either flying or swimming; and the dingy colour of the back, and the dirty white of the speckles of the latter, instantly distinguish it from the bird in second winter. On the same day I shot a bird second winter plumage: at this stage the young is very similar to the adult, but the collar of faint speckles on the neck distinguishes it from the old bird. For the plumage of the young in first winter and spring and of the adult in autumn and winter, see my notes in the 'Zoologist' (Zool. 9611). These birds fly much more willingly than the great northern diver, and by this means I lost shots at some adults in the autumn moult, the throats being as in summer, but thickly speckled with white: this was in the beginning of October. I find as yet that no correspondent has answered my query, Did they ever see a redthroated diver, in the flesh, in the summer adult state of plumage, in the months of December or January? No practical marine ornithologist would put much faith in Temminck: I cannot, for I have read too much "bosh" in his work to come to any conclusion but that he did not always write from experience.

Great Northern Diver.—I have to thank Mr. W. Jeffery, jun. (Zool. 9716), for answers to my query, on the summer and winter plumages of the Colymbi (Zool. 9611). The birds mentioned by him are in mixed plumage and *females*, and most probably very old birds, either backward in the moult or throwing out "false" feathers, as many birds will do; for instance, I knew an old duck (female) to throw out the distinctive feathers of the mallard. If the reader refers to my note on the great northern diver (Zool. 9610), I have written, "As late as January I have shot birds with summer feathers still in their plumage, and appearing *new*; these were *old females*." But these two instances of Mr. Jeffery's, so late in the winter, will not be often

backed up by similar examples. Last winter I killed (with a good object) some dozens of these birds, and only one had a summer feather in the back or neck, though many were adults, and that bird had ten speckled feathers in the left scapular. The ovaries had been well taxed. This bird is not plentiful this year, the redthroated diver having taken its place in numbers, though it is generally more abundant than *Colymbus septentrionalis*. On the 12th of October I hunted four of these birds, three adults moulting, but with very few white feathers in the throat, which was black, as in summer, with the exception of the collars. Though I got in range several times, the rain damped my ammunition, for it was spitting wet, and a miss or a hang-fire "sold" me. So near was I to one I could count his speckles, if he had kept up long enough, but I was drawing a damp charge. The fourth was immature. Fellow naturalists, if your gun is damp, draw your shot and the powder-wad, and drop a burning vesuvian down the barrel; it will instantly burn your powder, and save valuable time.

Purple Sandpiper.—Very abundant in November.

Snow Bunting.—Saw two, on the 27th of November, on the West Pier, Kingstown. Since then numbers appeared on the sea-rocks, Dalkey.

Greenshank.—Saw great numbers on the North Strand, Dublin Bay. A boorish fellow shot one before me, and would not part with it, preferring to eat it than oblige me or take money for it. They are wary, and very hard to shoot. My best grounds are closed against me, through the lunatics calling themselves "Fenians:" the Pigeon House, Fort Strand, is closed against intrusion.

Shorteared Owl.—By no means scarce in October. Out of three shot on Dalkey Island I got one, a young female. Two, a male and young female, I also got, shot more inland. They are never common in this county.

H. BLAKE-KNOX.

Ulverton Place, Dalkey, December, 1866.

Destruction of Birds by Telegraph-wires.—I have observed several instances of the destruction of birds by telegraph-wires within the last two or three years. A specimen of the kingfisher was picked up a short time since by a man on the railway line at Lakenham. My friend Mr. Arthur Taylor picked up specimens of the cuckoo and wrenneck, laying both together on the embankment of the railway near Somerleyton

Station, in Suffolk, about a month since. I remember finding examples of the black-bird and redwing by the roadside, in the neighbourhood of Wymondham, two years ago. All the individuals above named were killed in precisely the same manner, *viz.*, across the throat, in one or two instances the windpipe being nearly severed; I had a very fine example of the woodcock forwarded to me during 1863 by a friend from Royston, in Hertfordshire: this bird had received a large gash across its breast: it must have struck the wires with great force, as I found they had cut half through the poor victim's body.—*T. E. Gunn; West Pottergate, Norwich.*

Birds at Sea.—On the 5th of October, 1865, during the voyage of the steam-ship "Nova Scotia" from Liverpool to Quebec, Canada, when in lat. $26^{\circ} 28' N.$, long. $23^{\circ} 24' W.$, over 500 miles from the coast of Ireland, and 700 from Liverpool, the following birds were captured on the deck and rigging of the steamer:—golden plover (*Charadrius virginianus*), two specimens; virginian rail (*Rallus virginianus*), one specimen. The former is common to both continents, and the latter to the Eastern and Middle States of America. The birds were brought to Quebec by Mr. W. F. Bowes, the officer in charge of the mails. Nine other species came on board the steamer, a few of which Mr. Bowes informed me belonged to the Falconidæ. It is to be regretted these were not brought to this city for identification. The capture of American birds so close to Europe is very interesting to naturalists who study the geographical range of species belonging to both continents.—*William Cooper; Quebec, Canada, October 24, 1865.*

Ornithological Scraps from Wexford.—On the New Bridge at Wexford I had the pleasure of seeing two white wagtails catching flies among the timber close to the water's edge: they would frequently perch on the top rail, quite close to me, with their mouths full of flies, evidently showing that they had young in the neighbourhood: late in the day I saw another pair several miles from where I saw the first. Saw a cirl bunting, a male: very rare in Ireland. I noticed a habit of the heron quite new to me: some were lying in the water, the head and neck only emerging: there was about a foot of water on the ooze. Saw three wild swans together far out towards the harbour; species unknown. There was a very fair sprinkling of blackheaded gulls on the ooze; a few curlews, whose whistle called back old recollections of wintry nights spent wild-fowl shooting, and made me wish for foggy November again; but, alas! it is only June, and the sun as hot as in the tropics, and not even enough ice in the little town to cool one's beer. Hooded crows very abundant. A few common gulls (*Larus canus*) and herring gulls (*L. argentatus*), young birds, were fishing in the river. A few stray cormorants passed overhead. In a lovely little dell upon the coast, I came upon a great blackbacked gull and a magpie, feeding side by side on a dreadfully putrescent horse. To do the hooded crows justice, not one was near it, but perhaps they were gorged.—*Harry Blake-Knox; Ulverton Place, Dalkey, June, 1865.*

Ornithological Notes from Beverley.—I beg to send you two or three more rare captures, which, added to my last communication (Zool. S.S. 27), will make up a complete list for the year 1865.—

Merlin. On the 6th of November Mr. Falgate, gamekeeper, of Eske, near Beverley, shot a female merlin, which I got, in the flesh, for my own collection. Mr. Falgate thought it was a sparrowhawk, and he tells me that he shot another exactly similar about the same time, which he threw away. The merlin is a rare hawk in this neighbourhood. I have four specimens, which are the only examples I had previously seen,

shot near to Bevetley. Mr. Falgate's specimen was shot within three miles of Beverley.

Stormy Petrel. On the 15th of November Mr. D. Brown, of Filey, sent me a beautiful male specimen of this species, in the flesh. It had been knocked down with a stick by a man, near to the town of Filey.

Great Spotted Woodpecker. An immature male of this species was shot by William Ward, gamekeeper, at Cliff, near Beverley, about the same date as the petrel, and was sent, in the flesh, to Mr. R. Richardson, for preservation, on the 18th of November, on which day I saw it.

Turtle Dove. On the 18th of November, an immature male of the turtle dove was also shot at Cliff, by William Ward, and I saw it, in the flesh, at Mr. R. Richardson's.

Quail. A splendid mature male of this little game bird was sent to me, in the flesh, by Mr. Kemp, gamekeeper, of Skerne, near Driffield, on the 1st of December: he had shot it near to Skerne on the 30th of November.—*W. W. Boulton; Beverley, December 9, 1865.*

Peregrine Falcon in Suffolk.—A fine immature female specimen of *Falco peregrinus* was shot at Geldestone, near Beccles, in Suffolk, on the 23rd of December last. It weighed $2\frac{1}{2}$ lbs., and measured 20 inches in length from beak to tail, both included; 3 feet 9 inches across its extended wings to the tip of each, and 15 inches in the wing from carpal joint to tip.—*T. E. Gunn; West Pottergate, Norwich, January 2, 1866.*

The Lesser Kestrel at Cambridge.—In accordance with my suggestion (Zool. 9846) Mr. Newton has examined the bird there mentioned: it turns out to be the common kestrel (*Falco Tinnunculus*). This result must have been anticipated.—*Edward Newman.*

Great Gray Shrike at Pevensey.—On Saturday last, the 30th of December, Mr. Adams, fishmonger, of this place, sent me for inspection a fine male great gray shrike, in the flesh, that had been shot at Pevensey a day or two before. It was a beautiful specimen, and, to show that people know what to ask for rare birds here, the price he put on it was ten shillings. I did not buy it, having a very beautiful one in my collection.—*John Dutton; Eastbourne, January 2, 1866.*

Martins at Christmas.—Martins remained with us until after Christmas; three were seen at Millendreat on the 18th of December, two in Looe on Christmas Day, and I saw one on the 26th of December, 1865.—*Stephen Clogg; East Looe, Liskeard, January 9, 1866.*

Hoopoe at Royston: White Sparrow, &c.—A fine male specimen of the hoopoe (*Upupa epops*) was shot in this neighbourhood on the 18th of April, 1865, and placed under my care for preservation. On the 23rd of July a variety of the house sparrow (*Passer domesticus*), being a pure white. On the 29th of November a common starling (*Sturnus vulgaris*), being a clear white on the tail and all lower parts of the body, the rest part gray. A female specimen of the great gray shrike (*Lanius excubitor*) was killed on the 5th of December, which I also had the pleasure of preserving.—*William Norman; Royston, Herts, January 16, 1866.*

The Purple Sandpiper.—A correspondent in the 'Field' of last week writes on having obtained a purple sandpiper at Eastbourne. It may not be generally known among ornithologists that small parties of the purple sandpiper visit the rocky coasts of Devon and Cornwall every year, arriving at the latter end of October, and

remaining until the spring; but during the last two months they have been unusually abundant. A few weeks since, on visiting the Plymouth Breakwater with a friend, we fell in with several flocks, from which we obtained many specimens. When feeding on the rocks during stormy weather, the purple sandpiper has a habit of crouching on the approach of a large wave, holding firmly on to the rock, and allowing the spray to dash completely over it; on the receding of the wave it rises and runs about nimbly, feeding until the approach of the next.—*John Gatcombe; Plymouth, in the 'Field' of January 13, 1866.*

Large Snipe.—A specimen of the large snipe, before mentioned in the 'Zoologist,' by Mr. Rodd (Zool. 4704), and Mr. Gatcombe (Zool. 7938), killed on Dartmoor on the 13th of December, was brought me the following day. It seemed rather smaller than the individuals previously described, weighing only about $5\frac{1}{2}$ ounces. The markings were very distinct and bright, but did not greatly differ from those of *Scolopax gallinago*. The body was remarkably long. Mr. Gould is inclined to consider these large snipes as belonging to a distinct species, and proposes the name *S. ru-sata* for it in case this is ascertained to be so. Captain Morshead informs me he has shot a bird very similar on the Woolwich Marshes.—*J. Brooking-Rowe; December 22, 1865.*

Colossal Bird.—A gentleman now in Nelson reports to have discovered, in some beds of limestone on the other side of the bay, fossil remains of a gigantic bird, estimated to have stood about twenty-five feet high. The fossils are in a most perfect state, and have been thus described to us:—The most complete specimen is that of a head, with the absence of a lower jaw, the extreme dimensions of it being 3 feet 4 inches by 1 foot 10 inches; the orbit, or what is seen of the eye, measures $4\frac{1}{2}$ inches by $2\frac{1}{2}$ inches. The next specimen is that of a body without the neck: in this specimen the sternum shows itself highly developed, but rather flat; the tail is long, the body very bulky. The wings, which are well defined, and are large and close to the body, are separated by a large saddle or cradle, very graceful in form. The feathers covering the body are of large size, and lying close. The body lies on its side, the bulky part facing the lower ground or valley. The bad weather prevented further research. Part of the abdomen, which seemed to be very highly developed, and the legs, if they were to be found, were still covered by about two or three feet of soil and entangled in the roots of shrubs. Several detached pieces of fossils of similar kind were found not far from the same spot. From the description given of these remains they do not appear to have belonged to a moa, but to some other gigantic bird of which we have no record in New Zealand. The gentleman who made the discovery has waited upon the superintendent, and offers to disclose the remains to the Government.—*From the 'Nelson Examiner,' October 12, 1865. [Communicated by Mr. F. Tuckett.]*

Dodo Bones in the Island of Mauritius.—The 'Mauritius Commercial Gazette' contains the following particulars of the discovery of bones of the dodo in the Island of Mauritius:—"Mr. Clark, during a very long residence here, had made many inquiries and researches in order to learn something more about the dodo than was already known generally, or to find some remnants of it, but without success. On Dr. Ayres's last visit to Mahebourg he conversed with Mr. Clark about the dodo, and asked whether by digging round the ruins of the old Dutch settlement there might not be a chance of meeting with some remains? Mr. Clark did not see any probability of success in that quarter, as these dwellings were situated on a spot where nothing would be likely to bury itself in the earth, of which the surface is every year swept completely

by the water which flows from the mountains; but he said he thought a likely spot to contain such remains would be in alluvial deposits. A few days after Mr. Clark remarked that some marshes in the vicinity of Mahebourg were likely to furnish these coveted remains; but having neither time nor means at his disposal, he did not undertake the search, though bearing in mind his impression on the subject. The commencement of the railway works, with their numerous cuttings at various heights, gave hopes to Mr. Clark that some remains might be discovered; but his inquiries from those employed there on this subject failed to elicit any information. About two months ago, Mr. Gaston de Bissy caused to be dug from a marsh on his property, known as 'La Mare aux Songes,' the alluvium contained in it, to use as manure. After digging two or three feet, the men came in contact with bones of tortoises and deer, the former in vast numbers. As soon as Mr. Clark heard of this, he went to Mr. de Bissy and stated to him what had long been his opinion as to the position in which dodo's bones might be found, requesting him to give orders to the diggers to lay by carefully whatever bones they might turn up. Mr. de Bissy was much pleased with the chance of making so interesting a discovery, and at once ordered that Mr. Clark's request should be fulfilled. Mr. Clark visited the estate many times, but without obtaining any satisfactory intelligence. He at length engaged two men to enter the dark-coloured water, about three feet deep, and feel in the soft mud at the bottom with their feet. In a short time he had the inexpressible satisfaction of finding a broken tarsus, an entire tibia and part of another. He at once commenced operations in earnest, and has been fortunate enough to find every important bone of that remarkable bird, including cranium, upper and lower mandibles of bill, cervical and dorsal vertebræ, ribs, coracoid bones, scapulæ and clavicle, sternum, humerus, ulna, pelvis, femur, tibia and tarsometatarsus, so that an experienced person can well build a dodo from these remains, the toes being the only part wanting. The skull of this bird was of amazing thickness, and the cerebral cavity very small. The beak of great strength and solidity, as are the condyles of the lower mandible. Some of the cervical vertebræ are more than two inches in diameter, and of very elaborate structure. The sternum, of which the form shows a strong resemblance to that of the pigeon tribe, in some specimens is more than five inches wide and seven long. The keel is a quarter of an inch thick, and about an inch deep in the deepest part, which is at the centre; and the sternum is there three-quarters of an inch in thickness, but it thins off to a sharp edge at the margin. The humerus is less than four inches in length, and the shaft only about three-eighths of an inch in diameter, and the ulna under three inches, and less than a quarter of an inch in thickness. Some femurs are nearly seven inches long and more than an inch in diameter, and tibiæ nine inches long, and the upper condyles two inches in diameter. The tarsometatarsi are of very solid bone, and have been found in greater numbers than any others: they are about the length of those of a good-sized turkey, but more than twice the thickness. Only two or three craniums have been found, with a few fragments. The paucity of these remains as compared with other parts of the frame may very possibly arise from the numerous apertures in the head, into which roots insinuated themselves, thus disintegrating the structure. The upper mandible of the bill has suffered from the same cause, and only two tolerably perfect specimens of that organ have been obtained, while the under mandibles are numerous; but only three or four have been found in which both rami remain attached. The tip of one upper mandible is two inches in depth and an inch in thickness. The vertebræ

are very strong, and show that the spinal cord was fully double the size of that of the turkey. In only one instance has the presence of a fragment of the furcula been found attached to the coracoid bone, but several have the scapula united to them. These bones present a great diversity of colours. Those which were found near the springs in the marsh are nearly of their original hue. Some found alongside of a large bois-de-natte tree were nearly of the colour of that wood, and many others are nearly as black as ebony. Mr. Clark deposited the first specimens of dodo's bones he obtained in the museum at the Royal College, as well as those of the flamingo, the existence of which in Mauritius was remembered by the parents of persons now living. He has also sent a complete set of dodo's bones to Professor Owen, for the British Museum."

The Great Northern Diver : Summer and Winter Plumage.—This fine species has appeared on our coasts, including the Scilly Islands, in larger numbers than usual, and no less than five have been captured during the last fortnight, in their full spotted plumage, with slight indications of the neck-bands disappearing, and of the dorsal feathers having cinereous feathers cropping out: all these birds appeared more or less emaciated, and to all appearances the victims of some disorder which checked their moulting, and thus caused their capture. I have very little doubt that there is a tendency in all the Colymbidæ to assume the *imber* plumage in the winter, but the question still remains whether or not at an advanced age the adult summer plumage is retained *perennially*.—Edward Hearle Rodd; Penzance, December 15, 1865.

Change of Plumage in Great Northern Diver.—A great northern diver (*Colymbus glacialis*) was shot here on Saturday, the 11th of November, with the plumage changing from summer to winter. The top of the head and back of the neck have lost the beautiful green shade of summer, being now of a deep slate; the front of the neck is a mixture of black and white; the crescent under the chin has assumed a perfect white; the patch on either side of the neck is much less than in summer; the breast is a pure white. On the back there are three kinds of feathers—those of summer, black with white spots; some of the deep cinereous hue of winter; whilst others are in a state of change, the black fading into slate, with the white spots almost obliterated. On making a minute examination of the bird, I could not find a single feather in a state showing that moult was taking place, yet, as I have described above, the winter plumage was superseding the summer, as it would appear, from change of colour, not by moult: there is further evidence that that is the case from the fact that on pulling out one of the feathers, which is in a state of change, there was evidently secretion going on at the base of the quill, which was filled with a slightly bloody-coloured fluid for about one-third of its length: from this I conclude the old feather becomes renewed as well as changed in colour. I send you feathers in the three different stages, that you may judge for yourself as to their state, and I think you will still be able to find traces of renewed secretion in each of the feathers, although they are now very much dried. This is the only specimen that I have ever had an opportunity of closely examining in the autumnal change, so it would be premature for me to say, without further proof, that the autumnal change is merely that of colour, yet I think the evidence is such in this case that the fact will prove to be so on future investigation. There is not the least doubt, in my opinion, but that all the Colymbi have distinct summer and winter plumage. I had an opportunity, on Sunday last, of examining, through a powerful glass, at about three hundred yards distance, eight

specimens; all, with one exception, were in perfect winter plumage,—the exceptional one had a few summer feathers remaining on the back, with some black feathers mixed with the white on the lower part of the neck. These eight birds were collected together at the mouth of the harbour. This is not an unusual occurrence after a severe south-west gale, from which we are completely sheltered, and I well recollect the circumstance mentioned in Morris's 'British Birds,' in which upwards of thirty were collected at one time, after a south-west gale of many days' duration, and on examining them with the late Mr. Jackson, of this place, we could not detect one that was not in the pure winter plumage. There is not a winter passes without many specimens of the great northern diver being found here.—*Stephen Clogg; East Loce, Liskeard.*

Great Crested Grebe near Birmingham.—On the 15th of November a great crested grebe (*Podiceps cristatus*) was shot on one of the pools in Sutton Park. The bird is now in the hands of Mr. Franklin, taxidermist, of this town.—*T. Jephcott, jun.; Balsall Heath, Birmingham, November 21, 1865.*

Nesting of the Little Tern.—Having last summer found reason for suspecting this pretty sea-swallow (said by Mr. Adams to be only a rare visitant to our western shores) of breeding at the northern entrance of the Menai Straits, I was glad to seize an opportunity of visiting the locality early last June, and of verifying my conjecture. A number of nests were found, seldom if ever in the accidental hollows in the pebbly sand, as described by Mr. Yarrell, and such as the common tern mostly uses, but generally *scooped out*, as stated in 'Birdsnesting,'—in this respect precisely resembling neighbouring nests of the ringed dotterell. *Secondly*, the complement of the number of eggs, in repeated instances, was found to be four, whilst Messrs. Yarrell, Mëyer, Doubleday and Adams, give no more than two—three! The fact serves to confirm my supposition that the birds have long bred here undisturbed, the very boys of the nearest houses disclaiming all knowledge of sea-birds' eggs being procurable in the neighbourhood. *Thirdly*, Mr. Yarrell asserts all the eggs of this species to be *laid before the end of May*; on the contrary, I have simply to state that several nests were found containing perfectly fresh eggs, and *one with first egg, newly laid*, so lately as the 4th of June, and in a season, it must be remembered, of unusually early development! The eggs, as generally described, vary but little in colour or markings; in both, so closely resembling the surrounding sand and small shingle that to prove successful a very close search indeed must be instituted for them. The spot in question is a sand-bank nearly covered by shingle and wholly unprotected by rock. It would seem never to be completely submerged, and is a spur or "spit" of the extensive "Lavan Sands," abutting upon the main.—*H. Ecroyd Smith; Aldbro' House, Egremont, Birkenhead.*

The Great Auk on Lundy Island.—My friend the Rev. H. G. Heaven, of Lundy Island, has given me permission to forward you the following extracts from a letter he wrote me relative to the last appearance of the great auk on that island:—

"Lundy Island, September 6, 1865.

"With regard to your question whether we have ever *seen* the great auk, I must answer in the negative. There is strong presumptive evidence, however, that the great auk has been seen *alive* on the island within the last thirty years; at least I cannot imagine what other bird it was. The facts are as follows, and I must leave it to more experienced ornithologists to draw the conclusion:—In the year 1838 or 1839, as nearly as I can recollect,—not, however, more recently,—one of our men in

the egg season brought us an enormous egg, which we took for an abnormal specimen of the guillemot's egg, or, as they are locally named, the 'picked-billed murr.' This, however, the man strenuously denied, saying it was the egg of the 'king and queen murr,' and that it was very rare to get them, as there were only two or three 'king and queen murre' ever on the island. On being further questioned he said they were not like the 'picked-bills,' but like the 'razorbilled murre' (*i. e.* the razorbilled auk); that they were much larger than either of them; and he did not think they could fly, as he never saw them on the wing nor high up the cliffs like the other birds, and that they, as he expressed it, 'scuttled' into the water, tumbling among the boulders, the egg being only a little way above high-water. He thought they had deserted the island, as he had not seen them or an egg for (I believe) fifteen years till the one he brought to us; but that they (*i. e.* the people of the island) sometimes saw nothing of them for four or five years, but he accounted for this by supposing the birds had fixed on a spot, inaccessible to the eggers from the land, for breeding purposes. The shell of the egg we kept for some years, but unfortunately it at last got broken. It was precisely like the guillemot's egg in shape, nearly, if not quite, twice the size, with white ground and black and brown spots and blotches. We have never, however, met with bird or egg since, but as the island has become since that time constantly and yearly more frequented and populous, it may have permanently deserted the place. The man has been dead some years now, being then past middle age, and I think he had been an inhabitant of the island some twenty-five or thirty years. He spoke of the birds in such a way that one felt convinced of their existence, and that he himself had seen them, but he evidently knew no other name for them than 'king and queen murre,' which he said the islanders called them 'because they were so big, and stood up so bold-like.' In colour they were also like the 'razorbilled murr.' Nobody, he said, had ever succeeded in catching or destroying a bird, as far as he knew, because they were so close to the water, and scuttled into it so fast. The existence of these birds had been traditional on the island when he came to it, and even the oldest agreed there were never more than two or three couple. He himself never knew of more than one couple at a time."

As anything bearing upon the history of a bird now most probably extinct is of interest I thought you would like to have these notes for insertion in the 'Zoologist.'—*Murray A. Mathew; Weston-super-Mare, December 4, 1865.*

Little Auk at Liskeard.—A little auk was brought to me on Wednesday last, shot the day before: a bird of last year, not in very good plumage.—*Stephen Clogg; East Looe, Liskeard, January 9, 1866.*

Forktailed Petrel near Salisbury.—Last month I had a specimen of the forktailed or Leach's petrel (*Thalassidroma Leachii*) given to me: it was found on the 25th of November, at East Grinstead, a village about six miles from Salisbury, supposed to have flown against the electric telegraph wires, as it was discovered near the railway embankment with its wing broken; the bird was in excellent condition and in good plumage. The above is the second petrel of the same species that I have obtained in this neighbourhood; the other was picked up on the 27th of October, 1859, by a railway porter, about two miles from this city, on the Great Western Railway, having met with a similar fate.—*Henry Blackmore; Salisbury, January 6, 1866.*

Forktailed Petrel at Penzance.—During the severe gale which raged here on Saturday, the 25th of November, a forktailed petrel was found in an exhausted state

near this place, and it very soon died after being picked up. A common storm petrel was also found under similar circumstances. The forktailed petrel has occurred very sparingly here, and I have not seen a specimen for many years. Two other specimens of *Thalassidroma Leachii* were picked up, one on the banks of the Tamar, near Launceston, and the other in the heart of Bodmin Moors, from fifteen to twenty miles inland.—*Edward Hearle Rodd; Penzance.*

Forktailed Petrel at Plymouth.—A specimen of the forktailed petrel was captured alive, in a court behind a house in Plymouth, on the 3rd of December: it died in the course of the day. Another specimen was taken on the Tamar.—*J. Brooking-Rowe; 9, Princess Square, Plymouth.*

Nest within Nest.—One of the most interesting instances of abnormal nidification which I met with during last summer was the case of a blue titmouse (*Parus caeruleus*), which had formed its nest and laid eight eggs at the bottom of a blackbird's nest, into which the titmouse had inserted its own nest, as a little cup fits into a larger one. This was taken on the 5th of June, 1865, at Plompton, Sussex, and makes a very pretty object in its glass box. I have also known the same bird to build on the open bough of a spruce fir, like a chaffinch. In both instances, no doubt, the aberrant character of these structures arose from the absence of holes and decayed trees in the vicinity. I also saw a swallow's nest (*Hirundo rustica*) on a hedger's glove at the end of a beam.—*George Dawson Rowley; 5, Peel Terrace, Brighton, January 18, 1866.*

Turtle in Cornwall.—On the 3rd of January, as some children were playing on the beach at Hemmock, one mile to the westward of the Dodman Head, they saw a turtle endeavouring to make its way up a small stream of water which flows across the beach into the sea: having fetched a gaff from their cottage, they hooked it out of the stream and secured it. I saw it on the following day, and its weight was 23 lbs. It was taken to Megavissey, and bought by a fisherman there to send to the London market. If, therefore, its shell is wanted by any collector, the purchaser in town might probably be traced. I believe the turtle is numbered amongst our British reptiles; but whether this specimen had crossed the Atlantic, being driven here by the fierce south and south-westerly winds we have had this autumn, or whether it was swept from the deck of some homeward-bound ship, must be mere matter of conjecture.—*William Willmott; The Rectory, St. Michael Caerhays, St. Austell, in the 'Field' Newspaper.*

On the Occurrence of the Spinous Shark in Mount's Bay, Cornwall. By THOMAS CORNISH, Esq.

A SPECIMEN of the spinous shark was captured about a mile off shore at the back of Mousehole Island, in Mount's Bay, on the night of Friday, the 15th of December, 1865. It was taken by some men who were fishing for conger, and on conger bait, so that it took its bait on the ground. The bottom where it was caught was shingly,

and the water about ten to twelve fathoms deep. The place is in a strong tideway, and is a very favourite fishing-ground for small fish.

As the fish is a rare one in British seas, I trouble you with a somewhat detailed description.

Its dimensions were as follows:—

| | |
|---|------------------|
| Length over all | 6 feet 2 inches. |
| „ from eye to origin (or insertion) of caudal fin . | 4 „ 4½ „ |
| Greatest girth, immediately before origin of pectoral fins | 2 „ 2½ „ |
| Girth, immediately behind the after ends of the pectorals laid flat and backwards | 2 „ 1 „ |
| Girth, immediately before origin of first dorsal . | 1 „ 10½ „ |
| Greatest depth (about the middle of the pectoral fins laid flat and backwards) | 0 „ 6½ „ |
| Greatest breadth (at same place) | 1 „ 0 „ |
| Gape, with loose fleshy substances on either side of it in the angles of the jaws | 0 „ 9 „ |

The teeth were peculiar and bicuspidate, as described by Yarrell (ed. 1836, Suppl. to vol. ii. p. 59), large and placed in one single row on the extreme outside edge of each jaw. There was no tongue, but close inside the teeth of the lower jaw there was a semidetached membrane, under which on each side of the jaw, but not in front, there were teeth partly developed. There were similar teeth on each side, but again not in front, of the upper jaw, but there was not, or I failed to detect, any similar membrane. The upper jaw was considerably projectile: when I saw the fish, which was about ten hours after its capture, it was capable of easy protrusion to the extent of about two inches. The lower jaw was fixed. The eyes were large, and round rather than oblong, and the pupil was perpendicularly oblong and of a peculiar mother-of-pearl light green hue when the fish was brought to me.

The lateral line was very conspicuous, of a light colour, running parallel to the back throughout the entire length of the fish down to the very extremity of the upper lobe of the caudal fin. It was slightly raised and rough, but free from spines.

The position and shape of the fins and tail were as shown in Yarrell's Supplement (see above), p. 56, and in Couch's 'British Fishes,' vol. i. p. 54, and were, especially as to the anal and caudal fins, very unlike Yarrell's figure, Supplement, p. 54. Its shape, however, as will be seen from the measurements above given, was much more like that of the figure in Yarrell's Supplement, p. 54. It had in no way the appearance of a

floating fish. It was a long squat creature, reminding one of the monk, the angel fish and other bottom-feeders. Its fins, which were all well forward or well aft, very stout and thick, and very small in proportion to its length, seemed to imply a fish with powers of creeping along the bottom and of turning rapidly, by the aid of its powerful dorsal, anal and caudal fins, rather than a fish which could swim rapidly. Its spiracles on both sides were unfortunately destroyed by the gaff in effecting its capture: I could only, therefore, note that they were in the place proper for them in this description of shark.

In colour the fish was, above, of a dull leaden hue, the ridge of the back, the head and fins being darkest, and the extreme top of the snout rounding off flesh-coloured; and below, of a dirty white. I saw on it no other colours than these.

Its skin was perfectly free from scales, and was (or at least rapidly after death became—I cannot certainly affirm which) slimy. It was covered all over (except on the very belly itself) with very numerous small spines, precisely of the sort described by Yarrell, none exceeding the third of an inch in length, and all very sharp, the larger ones curved and the smaller ones straight, or not yet developed into a curve perhaps: they were distributed without any apparent arrangement whatever, and became fewer and smaller over the head until those on the snout were rudimentary merely: they were present on the fins, but were small there. A very large number of small ones were congregated on a curious callous, mobile and based in the skin, about the size of a crown piece, which existed about half-way between the pectorals and first dorsal and half-way between the ridge of the back and the lateral line, but as I found nothing corresponding to this on the other side I suppose it to be merely the callous of an old wound. The spines were all based in the skin itself, and were exceedingly mobile. The whole skin, and indeed the whole fish, was, to the touch, of the loosest, flabbiest nature, and portions of the fish which were raised and dropped always lay as they fell, just as is the case with the monk and angler. It reminded me, as I have said, strongly of these ground-feeders, and had anything but the tight tubby appearance given to it in recent descriptions. It was a long, low-lying, flabby fish.

Its snout was broad, flat and rounded, and, so to speak, overhung its mouth, which, when closed, was, owing to the projectile character of the upper jaw, less overhung by the upper jaw than is usual in sharks.

There were some three or four round dark spots on the head and near the ridge of the back in various parts of the fish, but I found no similar spots on the corresponding parts, and incline to think them accidental: they were mostly about the size of a crown-piece. I found them first on my second inspection of the fish.

The fish was opened in my presence on Tuesday, the 19th of December. We found in it two very large lobes of milt, apparently almost ready to be shed. Its liver was very soft, and very colourless; in fact, it was not a healthy liver at all, unless it had been affected by the period during which the fish had been dead (but it did not stink). The stomach was small, and communicated with the anal aperture by one long gut. In the stomach we found the head of a gray gurnard, cut off just across the nape and down the line of the operculum, so clean that we fitted it with the greatest ease to the shoulders of the same fish, which we also found undigested: these two bits of fish had undergone so little digestive action that I suppose they may have been the bait with which the fish was taken. There was also in the stomach a small bit of sea-weed (common oreweed, and showing no sign of digestive action on it whatever), and some digested food of a dark brown colour.

I wish it to be understood that I am merely supplementing the descriptions of this rare fish given by Yarrell and Couch. My specimen differs evidently very much from the figures given by them, but it also agrees so well with their descriptions that I think it must be the same fish. Anyhow, if its skin turns out tough enough, and not too gelatinous, I hope to have it shortly stuffed and properly set up in our Museum here.

It is to be observed that we have lately had here a long succession of southerly and south-westerly gales and wind.

THOMAS CORNISH.

Penzance, December 20, 1865.

Is it Spider or Mouse?—A very similar occurrence to that related by Mr. Birchall, in the last number of the 'Zoologist' (S. S. 8), in his note on the field mouse, came under my notice some time since, the only difference being that there was no mouse connected with it. On going into a small house in my garden, which was used for the purpose of keeping garden tools, I was surprised to find the floor strewn with the wings of various butterflies and moths; on seeking for the cause, I found, as Mr. Birchall did, a large spider's web, to which very many wings were hanging: the greatest accumulation of wings was under the web; many were hanging on the wall

below, whilst there was not one to be found on any other part of the walls. Being puzzled to find a reason for such an accumulation of wings I set to work to find a solution, when, after a short time, I came to the same conclusion as Mr. Birchall did at first; but, unlike him, I can see no good grounds for changing my opinion, for on closely examining the wings I found them cut off close to the body, in such a manner as to leave no doubt in my mind that the operation must have been done by some very small mouth, much smaller than that of a mouse, whilst I think the mouse would have caused much more damage to the wings than the real operator did. Then arose the question, Why? I think, plainly, because the spider, finding he could not drag the flies into his den with their wings attached without doing much damage to his web, proceeded to cut off the wings; then, throwing them out of the web, he would be able to drag the body away and feed on it at his leisure. Having thus, as I then and now think, successfully solved the difficulty, I swept away the web and spider, when all deposit of wings ceased, not one being found afterwards. The wings were, in most cases, those of the white large and small cabbage butterfly, one set of the little tortoiseshell, and a few moths—I forget of what species. The only evidence at all produced by Mr. Birchall against the mouse is that he caught one in the cave: certainly it may, in some measure, implicate him; but then I think the fact of a spider's web, with the known propensities of that insect, being found in both Mr. Birchall's and my case, is sufficient to point to the spider being the actual "marauder," and that the field mouse does not possess the habit Mr. Birchall assigns him.—*Stephen Clogg.*

Erratum.—At page 9, line 20, of Mr. Birchall's communication, to which Mr. Clogg refers, for *rocks* read *web*: on reading Mr. Birchall's very interesting communication I was certainly struck with an idea similar to that which Mr. Clogg has expressed; I mention this circumstance without wishing to influence the opinions of others.—*E. Newman.*

Gonocerus venator at *Box Hill*.—Twice, at a long interval during fifteen years, I have taken a single example, by beating the box trees on Box Hill, in May; but although I have beaten about the bush nearly every May, and also in other months, these two were all that rewarded my diligence. Still, it would be hazardous to say that the insects have not been there during any of those seasons, knowing as we do how many fortuitous circumstances must often happen together to enable an entomologist to find some particular species. Be this as it may, it is certain that on the 23rd instant [May] I was lucky enough to get eight males and eight females of this coveted beauty. They affect the shoots that stand out from the bushes, and are fond of sitting on the top of them in the bright sunshine, and taking short flights from one to another; and when one is in the net you are not sure of him, as he has a strong propensity to fly out of it. Fieber gives oaks and hedge-roses as the habitat of this species; with us it is exclusively found on the box.—*J. W. Douglas, in 'Entomologist's Monthly Magazine.'*

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

December 4, 1865.—F. P. PASCOE, Esq., President, in the Chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—‘Mémoires de la Société de Physique et d'Histoire Naturelle de Genève,’ Tome XVIII, 1^e Partie; presented by the Society. ‘Bulletin de la Société Impériale des Naturalistes de Moscou,’—1864, Nos. 2, 3 and 4,—1865, No. 1; by the Society. ‘Tijdschrift voor Entomologie,’ Vol. VIII, Parts 1—4; by the Entomological Society of the Netherlands. ‘Annales de la Société Entomologique de France,’ 1864, 4^e trim.; by the Society. ‘Stettiner Entomologische Zeitung,’ 1865, Nos. 4—6, and Nos. 10—12; by the Entomological Society of Stettin. ‘The Journal of Entomology,’ No. 13; by the Proprietors. ‘Synopsis of the Bombycidae of the United States,’ Part 2, by A. S. Packard, jun.; by the Author. ‘The Zoologist’ for December; by the Editor. ‘The Entomologist’s Monthly Magazine’ for December; by the Editors.

Election of Members.

The Rev. W. Farren White, Stonehouse Vicarage, Gloucestershire; and John Henry Hartwright, Esq., Terrace, Kennington Park, were severally balloted for, and elected Members.

Exhibitions, &c.

The Secretary exhibited a collection of Lepidoptera, Coleoptera and Hymenoptera, made at Moulmein and in the Salween Valley, British Burmah, in July and August, 1865, by Lieut. R. C. Beavan. Amongst the Coleoptera, Mr. Baly detected a new species of Prioptera.

Mr. S. Stevens exhibited a box of admirably-preserved Lepidoptera from Santa Marta, part of the collection of the late Mr. Bouchard; and a specimen of *Goliathus giganteus* captured by Mr. Du Chaillu about 100 miles inland from Fernand-Vaz, and thence brought home in his pocket, being the only insect which he was able to carry away with him on his recent hasty retreat from the interior of Western Africa.

Mr. Stainton exhibited a remarkable variety of *Tinea cloacella*, bred by Mr. C. S. Gregson, from dead birch trees at Llangollen; the moth was entirely suffused with a dark ruddy brown (almost coppery) colour.

Mr. F. Smith exhibited a series of bred specimens of the Tenthredinidous insect, *Cræsus septentrionalis*; he had found the larvæ nearly full-fed on the 20th of August last; in four or five days they buried themselves, and within a month the perfect flies emerged, much to his surprise, as he had not expected them to hatch until next spring.

Mr. McLachlan believed the fly to be double-brooded; he had captured it at Rannoch in June last.

Mr. F. Smith (on behalf of Dr. J. E. Gray) exhibited specimens of a greasy-looking *Noctua*, known as the “Bugong” moth (probably the *Agrotis spina*, *Guenée*),

sent from Australia by Dr. George Bennett), and read the following extract from that gentleman's 'Wanderings in New South Wales' (vol. i. p. 265):—

"Near this station [in the Murrumbidgee District] is a lofty table-mountain. It is named Bugong Mountain, from the circumstance of multitudes of small moths, called Bugong by the aborigines, congregating at certain months of the year about masses of granite, on this and other parts of the range. The months of November, December and January are quite a season of festivity among the native blacks, who assemble from far and near to collect the Bugong: the bodies of these insects contain a quantity of oil, and they are sought after as luscious and fattening food. I felt very desirous of investigating the places where these insects were said to congregate in such incredible quantities, and availed myself of the earliest opportunity to do so. After riding over the lower ranges we arrived a short distance above the base of the Bugong Mountain. This was the place where, upon the smooth sides or crevices of the granite blocks, the Bugong moths congregated in such incredible multitudes; but from the blacks having recently been here we found but few of the insects remaining. From the result of my observations it appears that the insects are only found in such multitudes on isolated and peculiar masses of granite: for what purpose they thus collect together is not a less curious than interesting subject of inquiry. Captain Cook mentions that at Thirsty Sound he found an incredible number of butterflies, so that for the space of three or four acres the air was crowded with them; that millions were to be seen in every direction. The Bugong is doubtless the same species as that observed by Captain Cook. The Bugong moths are found on the surfaces of the masses of granite, and to procure them with greater facility the natives make smothered fires underneath those rocks about which they are collected, and suffocate them with smoke, at the same time sweeping them off in bushels-full at a time. A circular space is cleared upon the ground, and on it a fire is lighted, and kept burning until the ground is considered to be sufficiently heated, when, the fire being removed and the ashes cleared away, the moths are placed thereon, and stirred about until the down and wings are removed from them; they are then placed on pieces of bark, and winnowed to separate the dust and wings; they are then pounded into masses or cakes, resembling lumps of fat, and may be compared in colour and consistence to dough made from smutty wheat mixed with fat: the masses will not keep good above a week unless smoked, when they will keep a much longer period: the taste is that of a sweet nut."

The President referred to the account given by Dr. Livingstone, in his African travels, of midges being made into cakes.

Mr. F. Smith said that a correspondent of his had recently inquired of him whether there was any truth in the statement that the soft-bodied little *Atropos pulsatorium* make a tapping noise like that attributed to *Anobium*; and the same correspondent also expressed his doubt as to *Anobium* making a tapping noise. On the latter point, in spite of the oft-repeated and commonly received statement that the "death-watch" made a distinct tapping against (say) an old wainscot and on the outside of it, as if for the purpose of notifying his presence to the female within, he (Mr. Smith) shared the doubt of his correspondent, and believed that the only noise made by the *Anobium* was caused by its gnawing the wood internally, and that there was no external tapping at all. He had himself met with instances in which the internal gnawing of wood by insects was distinctly audible, and, in particular, he mentioned the case of a

rustic garden-seat from which proceeded a noise like many watches simultaneously ticking, and which was solely caused by Xylophagous insects.

Mr. McLachlan mentioned that on one occasion he had heard a loud noise inside an elm tree, and on examination it proved to be nothing more than a swarm of *Scolytus* gnawing away at the wood.

Several Members said that, as they understood the popular account of the *Anobium*, the tapping was not represented as being external; it was the fact of the noise being heard, whilst nothing was visible which could be suggested as producing it, that caused the ignorant to dread the so-called death-watch.

The Rev. J. Greene exhibited eight moths bred by him from pupæ which had been sent to him by Mr. Batty, of Sheffield, as pupæ of *Acidalia subsericeata*: from these had emerged one moth which was undoubtedly *A. subsericeata*, one which did not agree with any species known to him, and six which were clearly referable to the recently-described *A. mancuniata* of Dr. Knaggs.

Mr. F. Moore produced for inspection a series of well-executed plates of the insects of N. America, engraved by Mr. Townend Glover, of the State Department of Agriculture: these plates were a portion only of an extensive series which Mr. Glover has in preparation for his forthcoming work on the Insects of North America, and are illustrative, in the different Orders, of many of the species in their various stages of transformation; accompanying them was also a series of plates illustrating the insects destructive to the cotton plants, orange and lime trees, potato, &c., in America. Mr. Glover has been officially engaged for some years past in the study of the insects injurious to vegetation in America, and the results of some of his labours have been published in recent volumes of the American Patent Office (Agricultural) Reports.

Mr. Janson also produced twenty-four plates of the same series, illustrative of the Coleoptera of North America.

Mr. C. A. Wilson, of Adelaide, communicated another instalment of his "Notes on the Buprestidæ of South Australia."

Prof. Westwood exhibited three new Longicorn beetles, for which he proposed the names of *Cantharocnemis Livingstonii* (from Zambesi), *Cantharoctenus Burchellii* (from Damara-land), and *Cantharoplatys Felderi* (from the White Nile). The two latter were clearly allied to *Cantharocnemis*, but differed therefrom and from one another; he therefore proposed for them different sub-generic names, but in so doing had endeavoured, by the form of name selected, to show their subordination to or dependence upon the primary genus *Cantharocnemis*.

The President was unable to see the advantage of giving distinct names to subdivisions which were admittedly not genera. In the present case, by what name was the insect to be known? *Cantharocnemis Felderi*? or *Cantharoplatys Felderi*? or *Cantharocnemis (Cantharoplatys) Felderi*? If by the first, why introduce the name *Cantharoplatys* at all? If by the second—then, either *Cantharoplatys* is in fact treated as a genus whilst it is confessedly not of generic value, or the fundamental rule of the binomial nomenclature, that an insect is known by the names of the genus and species to which it belongs, is infringed. If by the third, the binomial nomenclature is abrogated, and a trinomial system introduced, without any advantage to compensate for its greater cumbrousness and difficulty of retention in the memory. If a newly-discovered form differed so much from previously-known forms as to be incapable of admission into any established genus, it must of course be described as a

new genus and under a new name; but in his opinion there was not any subordinate or intermediate stage between the species and the genus to which it was either necessary or desirable that a distinct name should be applied.

Mr. Stainton thought that, in the state at which Natural History had arrived, and owing to the immense variety of forms which had been and would doubtless continue to be discovered, there was only a choice of difficulties from which he saw no escape: on the one hand, if comparatively small differences were for generic purposes disregarded, the genera became unmanageable in extent and incapable of precise description; on the other hand, if such differences were taken into account, there was no limit to the creation of genera; almost every species would eventually be raised to generic rank, or rather the genus would sink to the level of the species, and in fact be lost as a distinct step in the ladder of classification.

Papers read.

Mr. Geo. Semper, of Altona, communicated a paper entitled "Description of *Papilio Godefroyi*, n. sp."

Mr. R. McLachlan read a paper entitled "Observations on some remarkable Varieties of *Sterrha Sacaria*, Linn.; with general notes on Variation in Lepidoptera."

January 1, 1866.—F. P. PASCOE, Esq., President, in the Chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—
 'Proceedings of the Royal Society,' Vol. xiv. No. 78; presented by the Society.
 'Journal of the Proceedings of the Linnean Society,' Vol. viii. Zoology, Nos. 31 & 32; by the Society.
 'Bulletin de la Société Impériale des Naturalistes de Moscou,' 1865, No. 2; by the Society.
 'Verzeichniss der um St. Petersburg aufgefundenen Crabroninen,' von August Morawitz; by the Author.
 'Ueber eine neue, oder vielmehr verkaunte Form von Männchen unter den Mutillen, nebst einer Uebersicht der in Europa beobachteten Arten,' von August Morawitz; by the Author.
 'Enumeratio Animalium Musci Imperialis Academiæ Scientiarum Petropolitanae,' Lepidoptera, Parts i.—iii., by E. Ménétrières; presented by A. Morawitz, Esq.
 'Coleoptera Atlantidum, being an enumeration of the Coleopterous Insects of the Madeiras, Salvages and Canaries,' by T. Vernon Wollaston, M.A., F.L.S.; by the Author.
 'Sepp, Nederlandsche Insecten,' 2nd Ser. Vol. i. Nos. 47—50; Vol. ii. Nos. 1—8; by S. C. Snellen van Vollenhoven, Esq.
 'The Zoologist' for January; by the Editor.
 'The Entomologist's Monthly Magazine' for January; by the Editors.

The addition, by purchase, of the following was also announced:—
 'Skandinaviens Coleoptera,' af C. G. Thomson, Tome vii. Häftet ii; Duval, Fairmaire et Migneaux,
 'Genera des Coléoptères d'Europe,' Livr. 130.

Election of Members.

Henry Adams, Esq., F.L.S., Captain Julian C. Hobson, C. O. Rogers, Esq., and Dr. E. Perceval Wright, were severally ballotted for and elected Members. Thomas Blackburn, Esq., and W. B. Pryer, Esq., were severally ballotted for and elected Annual Subscribers.

Exhibitions, &c.

Mr. S. Stevens exhibited four large cases of Lepidoptera and Coleoptera from the Himalayas, containing numerous rare species, and many of the Lepidoptera having been bred from the larvæ.

Mr. Bates gave an account of Mr. Bartlett's explorations in the Amazons country; he had gone up the Amazons River as far as Nauta, and had thence followed the course of the Ucayli until he reached the eastern slopes of the Cordilleras: a collection of objects of Natural History, including several thousand insects, the result of four months' labour, had been despatched, and might shortly be expected in England. Whilst speaking of the Amazons, Mr. Bates desired to mention that the local authorities at Pará, which was merely the chief town of a province of Brazil, had recently voted £600 towards the expenses of scientific researches undertaken by Agassiz.

Prof. Westwood read extracts from a letter from M. Snellen van Vollenhoven, recounting some of his entomological experiences during the past season.

A conversation ensued respecting the female Lepidoptera which occur in autumn with undeveloped ovaries. Mr. J. Jenner Weir inquired whether such females, after hybernation, were found to have developed ovaries in the spring? It might be that early hybernation was an aid to the development of the ovaries. Prof. Westwood thought it probable that the ovaries were developed during the winter; the difficulty was to say when the impregnation took place; this, in the case of wasps, must be in the autumn, since the males did not survive the winter. Mr. M'Lachlan observed that nearly all the hybernated specimens of *Vanessa* were females; but he had himself taken *Cerastis Vaccinii* and *C. spadicea* respectively *in copulâ* on willow-blossoms in the spring.

The following are descriptions of the three new exotic Longicorn beetles exhibited by Prof. Westwood at the previous Meeting:—

CANTHAROCNEMIS LIVINGSTONII, *Westw.*

C. piceo-niger; mandibulus subfalcatis, intus ante medium dente conico parvo armatis, apicibus oblique truncato-emarginatis; antennis subcrassis, capitis (cum mandibulis) et pronoti longitudine; capitis disco ruguloso, postice lævi, punctato; pronoti marginibus lateralibus subserratis, lateribus rude punctatis, disco sublævi nitido, tenuissime punctato, angulis posticis oblique emarginatis; elytris subrugulosis, punctatis, et singulis costis 5 parùm elevatis sed sat distinctis notatis; tibiis anticis extus 4- vel 5-denticulatis, denteque forti subapicali armatis, 4 posticis intus dense fulvo hirsutis.

Long. corp. lin. $15\frac{1}{2}$; mandib. lin. $2\frac{1}{2}$.

C. Spondyloide tertia parte major, magis nitidus et depressus, denticulis tibiarum anticarum minoribus.

Habitat Zambesi. Dom. rev. H. Rowleio captus. In Mus. Hopeiano Oxoniæ.

Sub-genus novum CANTHAROPLATYS, *Westw.*

A genere *Cantharocnemide* differt corpore magis depresso, mandibulis multo crassioribus dente subbasali armatis, antennis abbreviatis, elytris cicatricosis (nec punctatis), juguli angulis lateralibus valde prominentibus.

CANTHAROPLATYS FELDERI, *Westw.*

C. piceo-niger, subopacus; mandibulis subtrigono-falcatis, dente valido intus prope basin armatis; antennis latitudinem capitis longitudine vix superantibus; capite et pronoto punctatissimis, hujus disco magis lævi et subirregulari, utrinque circulariter subimpresso; capitis vertice longitudinaliter canaliculato; pronoto transverso, postice latiori, angulis posticis fere rectangulariter incis; elytris minute cicatricosis, punctisque minutis inter cicatrices dispositis, costis 3 longitudinalibus ordinariis vix distinctis; tibiis anticis extus in medio 2- vel 3-denticulatis, apice dente lato armatis, 4 posticis extus denticulatis; femoribus subtus castaneis; metasterno fulvo velutino sericante, disco crebre punctatissimo.

Long. corp. lin. 17; mandib. lin. 2.

Habitat in Africa, apud. fluv. "White Nile." Dom. Feldero captus, et nomine ejus honorato inscriptus.

Sub-genus novum CANTHAROCTENUS, *Westw.*

Cantharocnemidi proximum; differt prothorace magis cylindrico, antennis duplo longioribus, 18-articulatis, articulis duplo pectinatis, pedibusque longioribus.

CANTHAROCTENUS BURCHELLII, *Westw.*

C. piceo-castaneus, nitidus; prothorace cylindrico; mandibulis capitis longitudine, falcatis, apice valde oblique truncatis, dente acuto apicali, altero subapicali interno, basi etiam intus dente parvo conico nigro armatis; antennarum articulis omnibus (2 basalibus exceptis) infra ad basin dentibus 2 armatis, apice infra in lobum latum tenuem deflexum producto, cujus margo incisus dentes 2 alios simulat (inde antennæ singulæ 64 spinas habere videntur); capitis vertice in medio canali longitudinali tenui instructo; prothorace nitido, angulis anticis rotundatis, posticis oblique truncatis, lateribus pone medium spina parva armatis, disco nitido, utrinque pone medium tuberculo parum eminente subnotato; elytris prothorace multo latioribus, nitidis, punctatissimis, sutura striolisque 2 longitudinalibus lævibus vix distinctis notatis; meta-thorace subtus fulvo dense hirsuto; tibiis anticis planis, extus in medium spinis 2 denticulisque nonnullis minutis armatis, apiceque extus in spinam latam producto, 4 posticis extus denticulatis.

Long. corp. lin. 13; mandib. lin. 2.

Habitat "Damara Land" Africæ merid. Dom. Andersson captus. In Mus. Hopeiano Oxoniæ.

Papers read.

Mr. W. C. Hewitson communicated a further instalment of his "Descriptions of new Hesperidæ," including twenty-three species of the genus *Hesperia*.

The President read a paper entitled "A List of the Longicornia collected by the late Mr. P. Bouchard at Santa Marta." The species were upwards of fifty in number, and four new genera were characterized."—*J. W. D.*

*Additional Notes on the Spinous Shark taken in Mount's Bay (S. S. 102).—*I have since I wrote you examined the skin of my spinous shark, whilst in pickle preparatory to being stuffed. I find from it that the fish has four rows of teeth, all shaped as those of the front row, of irregular size, varying from half an inch to a quarter of an inch in width, and about half as long as they are wide. There is a serration marked, rather than developed, along the edge of each tooth. These four rows are erectile, and lie overlapping each other very close together, and much more perpendicularly in the jaws than is usual in sharks, so that the outer row being erect, and the lower ones all covered by the semidetached membrane of which I spoke, the mistake which I made of noting only one perfect row is one which would be likely to occur to any one examining the fish only whilst in its original form. Indeed so closely packed are the rows that it was not until I was in the act of extracting one of the front teeth that I observed the others. I send herewith the largest and the smallest tooth which I observed. In each the points are worn; they were sharper in most of the others. The large tooth is from the front row of the lower jaw; the small one is from one of the interior rows of the same jaw. The teeth lie in the jaws with the large end directed backwards. Besides the larger spines over the body, there are innumerable very small tubercles in every part of the skin, making it (being in itself soft and leathery) feel as if it were full of small pins' heads. Of the larger spines most stand alone, but many stand in groups of two, three, four, and even five and six, together. The bases of these groups are of irregular shape, and consist of the bases of the individual spines welded (if I may use the word) together. The large callous of which I spoke to you turned out, under this close examination of the skin, to be one of these groups, in which I could count no less than twenty-three distinct spines. There were most certainly spines, but small ones only, on all the fins. This examination also enabled me to ascertain the form and position of the gill-openings, which, as I told you, were too much torn on the outside to permit of accurate observation. They were five in number, all placed before the pectorals, and long and narrow. The nostrils were large and lobed, and there was not the opening behind the eyes which is usual in ground-sharks. I believe I have exhausted all my observations, and I have certainly troubled you at a length which only the rarity of the specimen can justify.—*Thomas Cornish; Penzance, January 30, 1866.*

Description of a Nereis new to Science.—The remarkable and beautiful animal described below I have raised to the rank of a new genus, based upon Col. Montagu's description and excellent figure, which I showed to Dr. Baird, and that gentleman pronounced it new to him, and I cannot find anything at all like it in any works I have referred to. The form and the remarkable curved lobes of the head, with other peculiarities described, will distinguish this from the rest of the Nereidæ.

DORVILLEA, *n. g.*

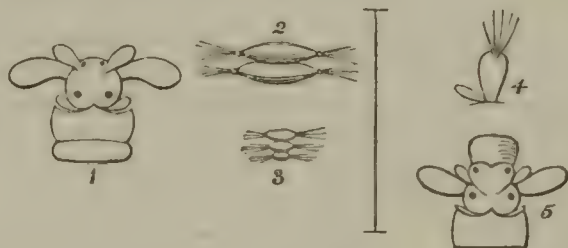
Nereis pennata, *Montagu's MSS.* p. 92, t. 47, f. 1, A, f.

Dorvillea lobata, *Parfitt.*

Head nearly round, convex above, the sides a little depressed; the antennæ are developed into two small elliptical and two large curved lobes. Eyes four, two placed in front and two far behind. Body gradually, but very distinctly tapers from the head

towards the posterior end, composed of about fifty articulations, each segment being very distinct, convex in the middle, and very much depressed at their junction with each other; feet lobes obovate, with a bundle of rather short stiff bristles. At the base of the foot-lobe is a narrow linear one naked. Proboscis similar to *Nereis*, crimson-red. Head and the flat lobe-like antennæ white; the former smaller than the first segment of the body; the two anterior eyes are placed so as to be frequently obscured by the anterior antennæ when the proboscis is exerted; the head is emarginate in front, but when at rest it is rounded in front (see figs. 1 and 5). Body rather pale crimson-red and white, the articulations very distinct; the anterior tricornuted in front and nearly as wide again as the following, somewhat depressed above, the most convex or actual dorsal surface of each articulation has a white transverse line, so that the body is alternately banded with white and crimson-red; the bundles of bristles in the foot-lobes pale yellow. Length one inch.

South coast of Devon; rare.



1. Head and first and second segments; 2. Segments in middle of body; 3. Three posterior segments; 4. Foot-lobe; 5. Head with proboscis protruded, and the lobes pressed forward, showing also the emargination of the anterior when the proboscis is extruded.

I have named this genus as a slight tribute of regard to Mr. H. D'Orville, who kindly placed Colonel Montagu's MSS. and drawings in my hands. The beautiful drawings were made by Mr. D'Orville's mother, many of which were transferred into the Linnean Society's 'Transactions,' to illustrate Colonel Montagu's papers on the animals of South Devon.—*Edward Parfitt; Devon and Exeter Institute, Exeter, January, 1865.*

Notes on a Voyage round the World. By BENJAMIN T. LOWNE, Esq.

I.—OCEANIC BIRDS.

In publishing the first of a series of papers on my observations during my voyage and stay in Australia my only excuse is that the observations were independent and original, and hence I hope will possess some interest, if the facts stated are not altogether new,—and I believe many are very well known,—yet they may be at least new to some of my readers, or possess corroborative interest, so I have at length been induced to publish the greater part of my notes, which had been consigned to oblivion for several years.

I include under the designation of oceanic birds all those which pass their lives at a great distance from land except during the breeding-season; in fact, all the Longipennes, except gulls and pelicans, which seek their food upon the waters, and are almost always on the wing, may be properly called oceanic birds. Whilst at sea in the southern hemisphere I passed the greater part of my time watching these interesting inhabitants of the air, and following Mr. Blyth's example, and laying aside my gun for a telescope, or rather for an opera-glass, which I found more convenient, I was enabled to watch their habits and movements, whilst a strong line and fish-hook supplied me from time to time with specimens, by the dissection of which I was enabled to discover the usual food on which these birds subsist.

Although valuable accounts of the habits of the petrel and the albatross have been published, all that I have seen have related almost exclusively to their habits during the breeding-season, on the Falkland Islands and on other rocky isles in the Southern Ocean, and I remember no account of their habits and mode of life during the long periods of their absence from land.

The head-quarters of oceanic birds in the southern hemisphere are the seas south of the tropic of Capricorn, and it is difficult to form any idea of the numbers of these birds, I believe the blue petrels ("prions," or "ice birds," as they are called by sailors) to be the most numerous of all birds. They are extremely shy, unlike all the other species which I observed, seldom approaching a ship, and never following it like the petrel and albatross, yet I have seen them in flocks continually south of the 50th parallel, and at one time about 500 miles east of Patagonia, in latitude $50^{\circ} 30'$ South, in the month of January, we crossed the track of an immense flight of prions; they were flying in large flocks towards the land, and surrounded the ship for about two hours. There appeared to be two species, but they were not near enough for me to determine very accurately. Several times the air seemed filled with these birds, so that any attempt even to guess at their numbers must be futile.

The other species of sea birds probably appear much more numerous than they are, owing to their following ships and remaining by them for many days. Although I never saw any of the petrels or the albatross soar above the ship, or even rise twenty yards from the water whilst near one, I have reason to believe that these birds often soar to considerable altitudes when on the look out for a ship, if I may use the expression; for I have repeatedly seen an albatross almost as a speck

in the sky at a very considerable elevation above the horizon, so that it must have been flying at a very great altitude.

These birds are commonly believed to follow ships to pick up whatever may be thrown overboard, but I do not believe such is the case, for they follow a school of whales in the same manner, and I have seldom seen three or four whales together unless they were attended by sea-birds. Some species of petrel are called "whale-birds" by sailors, whom I have always found pretty accurate observers in such matters. I have no doubt, however, that these birds find their favourite food much more abundantly in the wake of a ship or of a whale than elsewhere.

I have opened the stomachs of numerous sea birds belonging to the following species:—*Diomedea exalans*, *D. melanophrys*, *Puffinus major*, and a large black species of *Puffinus* called a "Nelly" by sailors, as well as *Daption capensis*, with the same invariable result; they all contained masses of small cuttle-fish, and nothing else, except now and then a lump of fat with which we had fed them, whilst the gizzard always contained the horny jaws of these Cephalopods, I have found as many as thirty in the gizzard of the black puffin, which I have called a "Nelly"; in fact, the cavity of the organ was quite full of them. Now I think it extremely unlikely that a bird should follow a ship thousands of miles for half-a-dozen pieces of fat which may possibly fall to its lot, although, unless there are plenty of passengers to throw fat to them, they would probably never get any: the truth is these birds all feed on the wing, picking up the cuttle-fish which come to the surface, and these are thrown up by the motion of the water in a ship's wake, just as worms are turned up by a plough.

The flight of oceanic birds is peculiar; it is somewhat analogous to that of vultures, except that, instead of soaring at great heights like them, they skim the surface of the sea. Mr. Darwin, in the 'Voyage of the Beagle,' mentions the fact that he has observed the condor remain suspended for hours in the air, without his being able to perceive the slightest motion of the wings, I have myself observed the same thing with the Egyptian and griffon vultures, but I have never seen such wonderful movements made with so little apparent muscular action as I have seen in the flight of oceanic birds. The captain of the ship in which I sailed, an old Scotch skipper, with an opinion of his own on most subjects, always attributed their movements to some supernatural power, which he said "made the birds go." I think he wished to express the existence of some unknown motive force in

these birds, and really the impression left on the mind by watching them closely leads to such a belief, so that it requires a strong effort to convince yourself that it is really a natural phenomenon obeying ordinary physical laws.

I have repeatedly watched an albatross closely for a quarter of an hour or more, whilst it has been making the most extraordinary turns and curves around the ship's stern, passing through the air with great rapidity, for I should estimate the ordinary velocity at which these birds fly at from twenty to thirty miles an hour, without once perceiving any motion in the wings, except the occasional adduction or abduction of one or other carpus in turning, I believe the whole is effected by the action of the wind upon their wings. If these birds remained, as they do, many days and nights on the wing, by muscular action, it would certainly be one of the most remarkable instances of prolonged muscular activity.

In calm weather the albatross flies very low, often running over the surface with extended wings, like all the smaller petrels; it is during a stiff breeze or gale that they appear "to glory in their wings." When the albatross first rises from the water, it usually does so by a succession of slow strokes, like a sea-gull rising from the sand: this slow motion of the wings causes the bird to rise rapidly through the air, owing to its exceedingly light weight compared to the wide extent of its wings and to its immense mass of feathers. I believe a very slight breeze applied, as it undoubtedly is, at the very best advantage, would be quite sufficient to supply a similar force and to elevate the bird in the air, for an albatross "beats up against the wind" something after the same manner as a ship, only the tacks are vertical instead of horizontal, the short backward tack being a steep ascent and the long forward one a gradual descent. In ascending against the wind I have seen an albatross repeatedly rise until its wings were not only placed vertically, instead of horizontally, but even so that the back of the bird has been slightly turned downwards, whilst its breast is inclined upwards, so that it has regained its ordinary position with some little apparent difficulty. This reminds me of a very extraordinary scene, which I witnessed on the 4th of January, 1863, in latitude 53° S. longitude 135° E. Four short-winged birds were circling above the ship like hawks; whether these birds belonged to the frigate-birds or not I could never determine, but they descended from time to time to attack the albatross, which they did by flying against their breasts, generally two dashing at once against the great sea-bird, and often

when the albatross were apparently embarrassed by the wind, these birds actually knocked them completely over, so that they fell upon the sea, and had to recover themselves before they could rise again. Although I watched the frigate birds, if they be frigate birds, I never saw them descend to pick up anything that the albatross disgorged: all I know further upon this interesting subject is that sailors call these pugnacious birds "Cape hens."

Most sea-birds, especially *Procellaria*, *Puffinus* and *Diomedea*, are infested with parasites of the genus *Lipeurus*, and the Cape pigeon (*Daption capensis*) has a flea which jumps like *Pulex irritans*; I was very surprised at this in a bird that dives for its food. The Cape pigeon is the only petrel I have seen do so, but I have seen it dive repeatedly with its wings spread as in flying. I was unfortunate with the fleas, for I could not catch any, they were so small and lively; I am, however, certain of their existence and also of their jumping.

I can really say very little on the various species of albatross, since I could not obtain a sufficient number of specimens. *D. exulans* varies very much with age, but I believe there is an allied and much larger species than the ordinary *D. exulans*, as yet unknown to naturalists, although sailors know very well that there is "a different albatross off Cape Horn." This bird is very much rarer than *D. exulans*, and appeared to me one-third larger. I never saw it north of the 52nd parallel, whilst I have seen *D. exulans* at the 30th. The southern birds were quite white, except the sides of the neck, which had a bright roseate tinge. I never saw but three of these birds, and was unable to obtain a specimen; hence I speak with some diffidence as to the existence of the species, although there is a skin in the British Museum, in immature plumage, which I think may possibly be the species in question, as it is evidently larger than the other specimens.

BENJAMIN T. LOWNE.

Notes on Birds observed at Rainham, Kent, during the Summer and Autumn of 1865. By W. H. POWER, Esq.

Merlin.—While walking on the marshes one day in September last, I heard some redshanks in the creek making a great noise, evidently being in a state of alarm: presently a single redshank appeared, shooting along within a few feet of the surface of the mud, and shrieking with fear; close behind him came a merlin in hot pursuit.

The redshank, in his terror, flew up a blind creek, and finding no outlet, settled on the mud, where he remained, while the merlin wheeled over, without, however, attempting to strike him; but at length, catching sight of me, he went off, leaving the redshank still on the mud, from which he did not attempt to move until I started him. The wonderful speed and activity of the merlin were here well displayed by the manner in which he followed, in all its doublings, a bird of such rapid and irregular flight as a redshank, and I fully believe the latter would hardly have escaped had not I appeared upon the scene.

Kestrel.—A pair of these birds in the autumn took possession of the roof of a solitary shed that had been erected on the marshes for the use of the cattle. For this post of observation a flock of starlings continually contended, and numerous were the skirmishes that took place, very often ending in the kestrels being driven off for a time. Although I constantly saw one or other of these kestrels apparently surrounded by the starlings, yet I never observed the slightest attempt on their part to retaliate by striking at any of their tormentors.

Missel Thrush.—I noticed the missel thrushes collecting into flocks about the end of July, at which time they usually become shy and difficult of approach. They breed in the orchards, but each pair appear to consider the ground for a certain distance around the nest private property, driving away with the greatest fury any unfortunate magpie, crow, jay, &c., that presumes to invade their territory.

Blackbird and Thrush.—Blackbirds and thrushes appear very fond of mulberries; a tree in the garden was continually under contribution. I have seen a blackbird with his head, throat and breast thoroughly stained with the juice.

Redstart.—An uncertain visitant, occurring some years in numbers, at other times not to be found at all. In April, 1862, these birds were exceedingly common, while this spring I only observed two, although constantly on the look out for them. They generally make their appearance as soon as the cherry orchards are in bloom, and may constantly be heard (when in numbers) till the bloom begins to fall; they then appear to move inland, a few pairs only remaining to breed.

Stonechat.—A resident species, in the summer frequenting the higher ground, where it breeds, in the winter appearing on the marshes, where I first noticed it this season on the 29th of September.

Wheatear.—Appeared as usual in the spring and autumn, on its migration. From its disappearance during the summer months, I fancy it seldom breeds in the locality.

Nightingale.—I can remember the time when this “sweet songster” was a common bird enough, and almost every hedge and garden had its pair of nightingales; but, of late years, I am sorry to say, they have become gradually scarcer and scarcer. This spring I only heard two, and those only for a few days on their first arrival; they departed again before attaining their full song, which I have always found they take some days to perfect themselves in. This unhappy decrease in numbers is caused, according to the villagers, by the number of brick-fields that have of late years been established in the neighbourhood: their theory is that the nightingale objects to the smell of burning bricks. How far this may be true I leave others to judge; but the fact of their scarcity is unfortunately undeniable.

Garden Warbler.—Arrived this year on the 3rd of May. It is common in the orchards and plantations, where in early summer it is constantly heard, though seldom seen, owing to its retiring habits.

Wood Wren.—An uncertain visitant; occurred this year on the 20th of April.

Willow Wren.—Common every summer; its somewhat melancholy song is to be constantly heard in the orchards.

Chiffchaff.—It is a remarkable fact that although the willow wren is so common, yet the chiffchaff itself is exceedingly rare in the district. I never heard it before this year, and even then quite late in the season, namely, the second week in September.

Marsh Titmouse.—I noticed several of these tits during September. This species is far more common than the cole tit, and next to the blue tit is the most common of the local *Paridæ*.

Gray Wagtail.—Appears on the marshes early in the autumn on its migration southwards. The first note I have of its appearance this year is on the 7th of September. It does not stay in any numbers, more often paying only a flying visit.

Wagtails, Pipits and Larks.—About the 20th of September the marshes, which had previously been almost void of birds, began to swarm with wagtails, pipits and larks; the latter in the usual autumnal flocks, by far exceeded the others in numbers. On ground where a few days previously I had perhaps seen only one lark they might now be flushed by the dozen. In the early part of October I saw and heard several larks soaring and attempting to sing.

Rock Pipit.—Appeared this season on the 7th of October. It is a

constant winter visitant, and although inferior in numbers to the meadow pipit, is yet tolerably common.

Tree Sparrow.—Early in the morning on the 28th of September my brother and I for the first time noticed this bird near Rainham. We were returning from the marshes, when we heard the note of the bird as it flew over in the mist, and recognized it at once. Although we tried hard it was some days before any were obtained; indeed for a day or two we lost sight of them, and I began to be afraid they had departed altogether. I have usually found them associated in flocks with the common house sparrow, and although there is little difficulty in distinguishing the note of the tree sparrow from that of the more common species, it is not so easy to tell one bird from another as they fly by in a flock, consequently the chances are considerably in favour of one's killing a house sparrow, as I found more than once to my cost.

Twite.—This regular winter visitant to the marshes made its appearance this year on the 2nd of October. These sober-coloured, but lively little birds feed principally on the seeds of marsh plants growing on the "saltings," which are covered during spring tides. They generally fly in small flocks of ten or a dozen, and are very restless, especially in windy weather, when they constantly change their feeding-grounds. Occasionally they may be found associating with linnets, from whose note their own is scarcely to be distinguished, except by a practised ear.

Starling.—A large flock of these birds, as before stated, continually waged war with some kestrels for possession of the roof of a shed on the marshes, and very often succeeded in driving off their adversaries. On the 11th of November, 1864, near the same place, I saw, in company with a flock of starlings, a perfectly white one. Several times during the course of the day did I try to get within range, but was always unsuccessful. I never saw it again.

Hooded Crow.—This crow is exceedingly common during the winter months, arriving about the second week in October, and leaving again early in the spring, although my brother once saw one as late as the 18th of April. These birds roost at night in the woods, and at first streak of dawn wend their way to the marshes, where they generally remain till dusk. In foggy weather they take to the orchards, and are then somewhat less difficult of approach. A "sprat field" is, however, their delight; here they gorge themselves with the manure until they smell most abominably; indeed they are not at all particular in their food,

little coming amiss to their stomachs, from live crabs to dead sheep.

Maggie and Jay.—Common in the woods, but seldom venturing down near the river, except in lambing season, when the offal left about the orchards proves a great attraction. They do not, however, lose in the slightest degree their habitual caution, but are ever on the alert, the first thing heard on entering an orchard being their derisive chatter, uttered as they take themselves off.

Wryneck.—The wryneck (local name “snake-bird”) was not quite so common this year as usual: in general it is to be heard all over the orchards, and I have several times, by means of a “call,” brought three at once into a tree within a few yards of my head, where they would remain for some time, staring about in the most ludicrous manner. Their note is not unlike that of the lesser spotted woodpecker, but is more prolonged and not nearly so shrill. The earliest note of their appearance that I have by me is April 3rd; their note last heard July 3rd; bird last seen August 27th.

Cuckoo.—First heard on the 22nd of April. This species, like the wryneck, was not quite so abundant this year as last; indeed their number varies greatly in different years, and in this district appears to me to bear a distinct relation to the presence or absence of a caterpillar that feeds upon the gooseberry-leaves. In some seasons these caterpillars infest the bushes in myriads, and at such times the cuckoos abound in the plantations, where I have often flushed from six to a dozen within a distance of one hundred yards. In the early part of the summer of 1862 I more than once heard the cuckoo singing at midnight: there was one in particular that generally commenced his song about 11 P. M., and continued it almost without intermission till nearly one o'clock in the morning. About the beginning of July the cuckoos collect in the plantations near the river (Medway), and often take long flights out over the marshes, on which they sometimes settle to feed upon a species of caterpillar at this time to be found on the marsh plants. Towards the latter end of the month the old birds begin to retire on their migration, and are in their turn replaced by the birds of the year; these may be found till about the middle of August, but as a rule all depart before September. This year, however, my brother shot one on the 11th of that month, the only instance to my knowledge of so late a stay.

Kingfisher.—I am afraid that kingfishers are not so common as they were even a few years ago. This autumn (the season during which

they are usually most common about Rainham) I scarcely saw any, while in 1863, at the same time of year, I met with several daily; and even allowing that I saw the same bird more than once in the course of the day, I am afraid it goes some way to prove that they are gradually becoming more rare. They used occasionally to breed in the banks of a deep pit, at a little distance from the marshes; but I believe the spot has been deserted by them for some years.

Swift.—First seen this year on the 3rd of May. This bird is not common in the neighbourhood, there being no suitable breeding-place for them except the church-tower; noticed them beginning to collect in flocks about the 13th of July. I saw one this year as late as the 7th of September.

Swallow.—First seen this year on the 18th of April.

Martin.—First seen on the 28th of April. These birds have been accustomed to breed under the eaves of the house as long ago as I can remember, and probably for many years before that date. They have lately evinced a great reluctance to abandon their ancient nesting-place, and for the last two years, as fast as they completed their nests, the gardener, who entertains a strong aversion for them, on the ground that they make a litter while feeding their young upon the path and grass in front of the house, has proceeded to knock down the nests with a broom or some such instrument. The martins, however, with a pertinacity worthy of a better reward, have constantly rebuilt. I am happy to say that I have this autumn obtained a promise that they shall not be interfered with in future.

Sand Martin.—An uncommon species in the locality. I have only seen a few this year in the autumn.

Ring Dove.—Common in the woods and on cultivated land; occasionally to be seen in the plantations near the marshes. In May, 1863, I took a ring dove's nest out of a hollow cherry-tree in an orchard within a few hundred yards of the marshes.

Stock Dove.—Early in July of this year I constantly saw small flocks of these pigeons on the marshes, but, owing to their exceeding wariness, could never get within range; at length one day I stalked some and killed three, one of them a young bird about two-thirds grown. This is, I think, presumptive that the stock dove still breeds in the Kentish woods, where, although they were formerly to be constantly found in the autumn, they have, within the last twenty years, become decidedly uncommon.

Ringed Plover.—First seen, on its move southward, on the 19th of

July. I noticed an instance of the great voracity of crabs: having shot a ringed plover, which fell in the water, I went as soon as I had reloaded to pick it up; not more than two minutes could have elapsed, but when I arrived at the spot where it fell I could only see the tip of one wing some distance below the surface of the water: upon seizing this and pulling it out, I landed at the same time three crabs; they had already made a considerable hole in the breast of the bird. I have since seen a redstart that was treated in the same way before it could be picked up.

Gray Plover.—I have only once observed these birds at Rainham. On the 8th of October last a flock of about fifteen or twenty settled on the mud in the creek; a friend who was with me succeeded in stalking them, and shot two. They had nearly completed their autumnal moult.

Lapwing.—A few pairs annually remain on the marshes to breed, but I fancy their eggs are generally taken by the shepherds, as I have only once seen a young bird in the neighbourhood.

Turnstone.—I saw one or two in September, but they are rare. Last year my brother killed one on the 26th of August, the first I ever saw in this district.

Oystercatcher.—One made its appearance on the 20th of last September; my brother, however, gave it so warm a reception that it quickly went off again. It is a decided rarity.

Heron.—Young birds of this species were common during July, but were, as usual, very shy. I only succeeded in getting at them once, shooting two one morning before breakfast. On the 10th of July I saw five flying together.

Curlew.—The curlews returned to the marshes this autumn about the second week in August. The young birds, on their arrival, are not nearly so wild as they afterwards become when collected into flocks, and are killed in numbers by the fishermen and "mud-diggers:" their mode of proceeding is to take with them a trained dog, as much like a fox as possible: after hiding in a dyke they send the dog out on the mud-flats left bare by the receding tide: as soon as the curlews see the animal they almost invariably attack it, flying round and round, uttering loud yells and occasionally making a pounce at it; the dog, who understands his business well, beats a retreat towards the spot where his master lies hidden; the curlews follow up their success with vigour, but to their confusion, for as soon as they are well within range the man shoots one, and reloading does the same again; so

engaged are they with the dog that sometimes as many as three are killed before the others take themselves off. Should the sportsman (if he may be so called), however, show himself during the process, the birds would quickly be off. This mode of shooting them can only be practised when they are in small parties of four or five; when in large flocks they do not take the slightest notice of the dog or of the "curlew whistle," which is also used to attract them. What is the cause of their attacking the dog in this manner? Is it aversion, curiosity or fascination? The fishermen account for it by supposing that foxes are common in the places where they are bred, and that they therefore have good cause for their apparent anger and aversion.

Whimbrel.—I noticed that whimbrels became more numerous towards the latter end of April and beginning of May. They did not stay long, however, soon leaving us for their breeding-grounds: they returned again in the autumn rather before the curlews, *viz.* about the end of July, when they became very common till towards October, when the greater number left us. A few, however, generally remain during the winter.

Redshank.—Local name, "tooke." A number of these birds breed annually on a large piece of marsh called "Rainham Saltings:" this consists of about one hundred acres of irreclaimable marsh-land, intersected in every direction by creeks and dykes: it is traversed by means of a "stray-way," a path that doubles and turns about in every direction to avoid the larger creeks, giving to a person following it the appearance of a man demented,—at one minute leading straight out from land, the next apparently walking back again,—now turning to the right hand, now to the left, occasionally disappearing altogether from view in a dyke. During spring-tides the greater part of the marsh is submerged, the higher hillocks only remaining uncovered. The redshanks pair about the middle or end of April, and at this time are constantly on the move, flying round and round in circles, incessantly uttering their note with great animation, occasionally rising and falling in the air with a tremulous motion of the wings, and at the same time making a trilling noise. It appears to me that these birds never rest; I have heard them at all hours of the day, and on a still night their cry sounds particularly wild and pleasing: besides their note uttered when on the wing, they are in the night in the habit of joining in a chorus (if I may so term it), one bird beginning and others chiming in one after another, much in the same manner as a flock of ducks assist the old drake in his clamorous quacking. It is by no

means an easy matter to find a redshank's nest, as, in the first place, as soon as they perceive an intruder on their domains, they immediately commence flying round, uttering loud cries, in the manner before described, and if a dog is present, dashing at it much in the same way as the curlews: they continue this circling almost incessantly until the intruder retires, but seldom settling, and then only for a short time. In the next place, supposing a bird is marked down, even then one part of the marsh is so like another, and a circuit being generally necessary to avoid creeks, &c., a person gets perfectly bewildered in a very short time. I was once so fortunate as to capture a young redshank that was apparently not many hours old; hearing a low "chirp" some distance ahead, I went forward, but almost immediately heard it again behind my back. I continued walking, first in one direction, then in another, but always with the same result: I had no sooner got close, as I thought, to the spot, than I heard the bird in quite a different direction; at length, having come to a stand-still in my uncertainty, I happened to cast my eyes on the ground at my feet, and immediately discovered my little ventriloquist perched on the top of the long stalk of a marsh plant. I thought at first that my hearing the chirp in so many directions was caused by a number of these young birds, but after capturing the above-mentioned, the note entirely ceased. The appearance of the full-grown young redshank before its first moult differs so much from that of the adult bird that it might almost be mistaken for another species. In shape and size it is like the adult, as also in the colour of the upper tail-coverts and transverse bars on the tail, but the general hue of its plumage is dark brown, the margins of the feathers on the back being tipped with buff; the breast and throat are lighter in colour, but spotted also with brown; the legs are pale flesh-colour. About the end of July redshanks begin to flock, and at the same time become wild and difficult of approach; their flight when at full speed is amazingly swift, and a large flock of them afford a very pretty sight dashing along a creek, first wheeling in one direction, then in another, uttering their cry incessantly all the while.

Green Sandpiper.—Appeared on its migration southward on the 17th of July; they soon became tolerably common, but are very wary, generally stationing themselves at a bend of a stream or sheet of water, and whisking round a corner when flushed. They often remind one forcibly of a snipe: the cry uttered almost immediately on taking wing, their subsequent rising high in the air and flying to a great

distance, sometimes returning again near to the spot from which they were flushed; in fact, I fancy that the green sandpiper is sometimes mistaken for a snipe by rustics, and may perhaps account for the tales one hears of snipe being seen even at Midsummer. I saw a green sandpiper as late as the 13th of October.

Common Sandpiper.—It is a curious fact that very few common sandpipers, and few, if any, green sandpipers visit Rainham on their spring migration northward, although both species become tolerably abundant in the autumn. I noticed the first this season on the 7th of July, and the last on the 13th of October, the latter being in company with a green sandpiper: this is later than I ever remember to have seen one, although last year I observed one as late as the 12th of the same month.

Common Snipe.—A very early visitant in the autumn. This season the first occurred on the 27th of July, and my brother once saw one as early as the 20th of the same month. These early birds are, however, only stragglers, the species not becoming at all common till the end of September or beginning of October.

Jack Snipe.—Not nearly so early as the preceding: first occurred this season on the 13th of October, about which time several made their appearance.

Little Stint.—Towards the end of July I observed one of these birds about some pools of water; it was decidedly wild, and for several days baffled all my attempts to shoot it; at length I one day wounded it, but, failing to mark the exact spot where the bird alighted, was unfortunately unable to find it.

Temminck's Stint.—On the 19th of July last I noticed a bird of this species running along the edge of a pool: mistaking it for a sandpiper, I took some trouble to put it up, and having shot it was greatly surprised to see that I had got a Temminck's stint. It was a bird of the year, and in plumage differed greatly from an adult of the same species: the markings on the back were almost exactly similar to those of Schinz's sandpiper in Yarrell. Again, on the 9th of September, a pair of these stints flying up the creek passed within range of the sea-wall, upon which my brother and I were sitting, waiting, and we each killed one. They proved to be adult birds in winter plumage. The above-mentioned are the only specimens of this stint that I ever met with near Rainham.

Dunlin.—Large "flings" of these birds were observed in September. They seldom came near the smaller creeks, apparently

preferring as feeding-grounds the extensive mud-flats towards Sheerness.

Wild Duck.—A few made their appearance early in September, but soon left the neighbourhood.

Teal.—I saw a large flock on the 15th of September; a few days later my brother killed a single bird that rose out of one of the creeks. As a rule, very few ducks are seen before hard weather sets in.

Common Tern.—The species was first seen this season about the latter end of July, from which time until the end of September they might constantly be seen beating the creeks in a most methodical manner.

Black Tern.—On several occasions during the autumn I fancied that I had seen a few of these terns, though at such a distance that it was impossible to identify them. At length, on the 12th of October, during a gale from the northward, I observed one beating about some sheltered pools of water inside the sea-wall: it proved to be a bird of the year. The species is far from common about the creeks.

Blackheaded Gull.—These gulls left this year for their breeding-grounds about the end of February; a few had returned by the 1st of July; these were mostly adult birds, still retaining the brown head. By far the greater number did not make their appearance until the end of July and beginning of August; at this time they collect into flocks, which consist chiefly of birds of the year, a few old ones only (and these without the brown head) to be found among them. This species, which is by far the most common about the creeks, continues in the neighbourhood during the whole winter, occasionally visiting the "sprat-fields" on the cultivated land, where, in company with the hooded crow, it enjoys a most savoury banquet. It is astonishing how correctly they time themselves in their visits inland, generally leaving the creeks as soon as the rising tide has covered the mud-banks; from this time till the turn of the tide not a gull is, as a rule, to be seen; but no sooner does the tide begin to ebb than they re-appear, first in ones and twos, then in detached parties, and immediately commence beating over and settling on the mud-flats, now covered by only an inch or two of water.

Common Gull.—Decidedly uncommon, being not nearly so often seen as the next species, the lesser blackbacked gull.

Lesser Blackbacked Gull.—I observed adult birds of this species early in July. They are, next to the blackheaded, the most common gull about the creeks; as many as fourteen have been seen together

in one flock; they are, however, exceedingly wild, and it is seldom that one can get within gun-shot of them. This and every other species of gull above the size of a blackheaded gull is in this neighbourhood called a "cob." Does the lesser blackbacked gull breed before attaining the mature plumage? One I shot on the 6th of July last would, I fancy, have attained its full plumage at the autumnal moult: it had apparently bred this year, the feathers of the wings and tail being much soiled and worn. A rather curious circumstance happened with regard to this very bird: having killed it one afternoon, I on my return hung it up in a tool-house to dry; about ten o'clock at night, on going to bring it in, I noticed that directly I touched the feathers both they and my hand exhibited a distinctly luminous appearance, exactly similar to that produced by rubbing one's hand with a lucifer-match: I fancy that this phosphorescence was due rather to the salt-water into which the bird had fallen than to any property possessed by the feathers themselves, since the luminosity was more distinct upon rubbing the breast (which was saturated with water) than any other part of the bird.

Herring Gull.—A few of these birds were seen during the autumn, but they are not nearly so numerous as the preceding species.

W. H. POWER.

Queen Square, Bloomsbury, December 22, 1865.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from Zool. S. S. 76.)

DECEMBER, 1865, AND JANUARY, 1866.

Green Plover or Peewit.—Immense flocks of peewits frequented the North Lincolnshire marshes, bordering the Humber, during December and up to the middle of January. Since this period, however, they have nearly altogether forsaken the open country, and betaken themselves to the higher lands running along the foot of the wolds. In consequence of the extreme mildness of the season I have found them wild and shy, and unusually difficult to approach. In the open marshes the only chance has been to stalk them by walking up the drains; even then it is extremely difficult to get within shot, as they are remarkably quick of hearing—an inadvertent step and splash in

the water, and they are off at once. Sometimes, after a long stalk, when I have all but succeeded in getting within range, the alarm-note has been sounded by some passing bird, and the whole flock has at once taken the alarm and gone off in a body. It is no unfrequent sight to see thousands together on the wing. Unlike the golden plover, they never attempt any order in their flight; sometimes the front rank will keep up some resemblance to a line, the remainder following in a disorderly mass. They do not appear to feed much in the marshes during the day, apparently resorting thither more for rest, and if undisturbed will remain for hours nearly on the same spot: towards evening, however, they are on the alert; the various flocks then wend their way to the partially cleared turnip-fields on the higher lands: here they feed during the night in company with golden plovers, returning to the open country at early dawn. These flocks follow night after night the same line of flight to their feeding-grounds, and this is almost the only time it is possible to obtain a shot, as they then seldom fly high, often only just rising above the hedge-tops in their course.

Golden Plover.—These plovers have been unusually plentiful in our marshes, often associating with the peewits, at other times keeping entirely aloof. One day I have seen nothing but the golden plovers in the marshes and the green plovers on the higher land; at other times the reverse is the case. On the wing the golden plovers fly with great regularity. When the flock consists of but few birds they usually fly in a line, one behind the other; larger flocks fly in the shape of the letter V, three or four birds flying behind in the wide part of the letter: larger flocks frequently take the form of a W. The larger the flock the less regularity in their flight; thus I have often seen thousands together pass over the marshes without any order, like a flock of starlings.

Shorteared Owl.—These owls have, I am afraid, left the district. It is now five or six weeks since I saw one: probably they have left us in consequence of their favourite haunts, the shorn stubbles, having been ploughed up, and the drain-banks mown. I have never seen these owls hawking by day, but have often observed them at dusk, beating backwards and forwards across the stubbles; they then glide silently across the fields, about two feet from the ground, now and then giving one short quick beat with their pinions, and then gliding on for thirty or forty yards without any visible movement of the wings. I have sometimes seen them in the evening flying round the corn-

stacks, on the look-out for mice. They can, however, fly with ease, even on the brightest day. One I put up from the stubbles, having been set upon by some blackheaded gulls, rose by a series of spirals to a great height, where for a long time I observed it flying round and round in circles, its wings apparently motionless, like a kite; the sun was shining brightly at the time, but the owl was evidently perfectly at home in the sunlight.

Pied Wagtail.—Probably owing to the extreme mildness of the season, pied wagtails have been more than usually numerous. I am constantly seeing them following the ploughs, and about the sheep-folds on the turnip-lands.

Scarcity of Wild Fowl in North Lincolnshire.—I never remember the Humber flats so destitute of birds as they have been this winter. As yet I have seen only one small flock of widgeons, and frequently in my walks along the embankment, with the exception of a few gulls and hooded crows, I have not seen a single bird. Snipes have been few and far between. Jack snipes I have found nearly as plentiful as usual.

Green Woodpecker.—I am sorry to say these beautiful birds are becoming very scarce. As a boy I can remember frequently seeing them in the woodlands in the neighbourhood of Louth, in this county. I heard the other day the cry of this bird in a small plantation in a neighbouring parish; previously to this I have not recognized its well-known laughing call in this neighbourhood for ten years.

Starling.—I have noticed some extremely large flocks of these birds in the marshes during the last few weeks: many thousands together in one flock feeding on the grass lands, and all busily employed in picking up something they found on the land. I shot two of these birds the other evening out of a large flock passing over. On opening them I found their stomachs literally crammed with a small gray grub, which I am not entomologist enough to distinguish. They were about half an inch in length, dark gray, with red or bright brown heads, about the thickness of a pin, and very tough. Are they young "wire-worms"? I have previously noticed in the 'Zoologist' (Zool. 9802), in connection with blackheaded gulls, the myriads of crane-flies which visited the marsh district in the autumn. If two birds had in one day devoured so many grubs, what must be the amount destroyed by one flock of these birds alone in a single day, and then for weeks together?

Great Ashcoloured Shrike (*Lanius excubitor*).—February 10. I had this day the great satisfaction of adding this rare bird to the fauna of this parish. When first seen by me it was sitting on the topmost twig of a solitary hawthorn-bush. Fortunately for the bird I had no gun, or am afraid I could not have resisted the temptation of adding it to my collection. Under cover of an adjoining bush I was able to approach near enough readily to identify it as the great shrike. On my showing myself it flew off to a neighbouring thorn, about twenty yards away, again perching on the topmost twig. I followed it from place to place for nearly half a mile; it invariably alighted on the topmost twig of some bush or tree. When perched its somewhat long tail was constantly on the move; now up, now down, sometimes held nearly at a right angle to the body of the bird: it reminded me very much in appearance of a magpie's tail. When flying the white mark and white outer tail-feathers were very conspicuous. Its note was like the word "clack, clack," or I can perhaps describe it better by the sound made by knocking two stones together. I twice succeeded in getting near enough to observe the hooked beak. The black streak beneath the eye was most conspicuous, and contrasted strongly against the ash-gray of the upper parts.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
February 10, 1866.

Correction of an Error.—I beg to correct an error in my "Flamborough Notes," given in the January number of the 'Zoologist' (Zool. S. S. 21). Misled by a local term, I have said, "my companion capturing a fine shad;" it should have been "pollack" (*Merlangus pollachius*).

A List of Birds observed in Pembrokeshire. By THOMAS DIX, Esq.

Kestrel.—Common, particularly in summer. I believe that in the spring we have an addition to the usual number, which stay through the winter.

Sparrowhawk.—Common. I consider this the most destructive hawk which the gamekeeper has to contend with; it is so bold and quick that, unless continually on the watch to prevent it, a covey of young birds is destroyed in a day or two.

Hen Harrier.—I have not seen this bird myself; but a friend, who is not likely to be mistaken, tells me a pair were to be seen all the

summer on some mountains in Carmarthenshire, near Newcastle-in-Emlyn.

Barn Owl.—Not common: I have only seen two specimens during the past year.

Tawny Owl.—This is *the* owl of the country, and very common; it was no uncommon thing in the spring to hear half-a-dozen hooting at the same time; they are then particularly noisy. A pair bred in some fir-trees at the back of the house, and they came every evening about dusk to a large ash, about fifty yards off, where they would remain some minutes, calling and hooting to each other. They have two or three call-notes, but the usual one is a single "yack," repeated at regular intervals, often for some minutes in succession: when I first heard it I thought it belonged to another species, but having shot the bird there could be no mistake, and it was a female. I believe the birds which bred here worked all night, for I repeatedly heard them again about dawn, but never after sunrise.

Redbacked Shrike.—Scarce in this district; I have seen only one bird (a male), which was in July.

Spotted Flycatcher.—Common; three or four pairs bred here last season.

Dipper.—Common about all the mountain-streams of any size, and upon the rivers. It seems to be fond of the rapid parts of a stream: at the fine falls at Kenarth, on the Teify, I have seen it dash into the stream only four or five feet above the fall, coming up just by the edge, apparently almost out of the falling water: it was evidently done for pleasure, as the bird was under water only two or three seconds. It is very solitary in its habits, except during the breeding-season, when a pair and their young are seen together for a short time. During the spring they often repeat their single call-note, which is very similar to that of the common wren, which bird this greatly resembles in its flight, dipping its body and flirting its tail.

Missel Thrush.—Common. I noticed this bird, in flocks of from ten to twenty, early in July. Heard singing, January 6, 1866.

Fieldfare.—This bird was by no means numerous during the winter of 1864-5. I noticed a few on the 30th of October, but they made no stay with us, only a few stragglers remaining a day or two: this winter they have been more plentiful. A large flock settled on the tall trees surrounding the house on the 5th of November, 1865; a few of them remained four or five days; they gradually left, and since then I have

only seen three or four occasionally, except some passing over at a considerable height towards the south-east.

Song Thrush.—Is not nearly so common as in the south and east of England. It is rather a scarce bird here.

Redwing.—Remains with us all the winter. I saw a small flock after the berries of the mountain ash on the 2nd of October, 1864. This winter they did not come so soon; the first I saw were on the 24th of October, 1865, but I think they are more numerous this year than last; they are generally to be seen on the catch-meadows, particularly those with a south aspect.

Blackbird.—More common than the song thrush, but not numerous. Just about the time when I saw the first fieldfares this winter (5th of November) I noticed this bird was more numerous, and as they were principally adult males there can be no doubt but that we have an addition to our number in the winter.

Hedgesparrow.—To be seen generally distributed, and one of our most common birds.

Robin.—Common everywhere.

Stonechat.—Common, particularly on the hill-sides, which are covered with furze: they are generally to be seen in pairs, and, like the hedgesparrow, in close company. During the severe weather last February, three pairs were in constant attendance upon some men who were moving earth from an old bank: they perched upon some bushes near by, watching for anything that might turn up in the shape of food, when down they came within a foot of the tools: they kept close watch, for several times I saw three or four fly down at the same moment, and so intent were they in their search that one was caught by a hat being placed over it, the man thinking I wished to have it.

Wheatear.—Two birds seen on the 3rd of August, 1865; one shot and brought to me: they were doubtless migrating, as I have not observed the bird in this district.

Sedge Warbler.—I have only heard this bird in one locality, in some willow-bushes near Cardigan.

Blackcap.—First heard on the 12th of April; three or four pairs bred in the plantations near, but it is not numerous.

Garden Warbler.—About as numerous as, and seen about a week after, the blackcap.

Whitethroat.—I only saw one or two pairs near here last year: they seemed more common in the hedges at a lower elevation, in the valleys and dingles.

Wood Warbler.—More generally distributed, and I think also more numerous, than in most parts of England. One is almost sure to meet with this bird in a plantation of beech and oak. It certainly prefers the beech to any other tree; I have invariably found them upon or near this tree when there are any in the plantation. I shot a fine male on the 20th of April: it was the first I saw.

Willow Warbler.—Much less numerous than in the east of England. Here it is about as common as the wood warbler: I first heard it singing on the 11th of April.

Chiffchaff.—This is about equal in number to the willow warbler. I saw a specimen on the 1st of April, and on the 4th I heard several. I have heard this bird in the early mornings of September repeating its double call-note; they appeared to be more numerous than in the spring.

Goldencrested Regulus.—This beautiful little bird is very common in the larch and fir plantations. On the 6th of November I saw a flock of about fifty: my attention was first drawn to them by their call-note, and as they were crossing a road between two plantations I had a good chance of seeing them. They hunted every tree on their route, and were quickly out of sight. I do not think there was a single bird of any other species with them.

Great Tit.—Common. I found a nest of this bird in a hole of the rock forming the side of a ravine, and just above a waterfall. The rock was overgrown with ivy and moss, so that it had something the appearance of a bank.

Blue Tit.—Common, and as numerous as the great tit.

Cole Tit.—Quite as numerous as the blue tit, and more common than I ever found it in England. I have seen the nest in stone walls near plantations: one was shown me when the old bird was sitting; she allowed the stones in front to be taken away without showing any fear or leaving the nest.

Marsh Tit.—I have not seen a single specimen of this bird, although I have looked carefully for it.

Longtailed Tit.—Very abundant. They are now (January) to be seen, in flocks of twenty or thirty, hunting in company, generally taking a round of a plantation or following a hedge. They seem to take but little notice of anything, but are continually on the move, and are not at all shy.

Pied Wagtail.—A constant resident, and I believe we have more during the winter than in the summer. In September I noticed two

or three parties of from fifteen to twenty, which I believe were migrating; they appeared to consist of two or three families. I have invariably, during the winter, seen this bird in pairs, male and female, so there is some reason to think they pair for life. They seem particularly fond of being in a sheep-fold, seldom entirely leaving it.

Gray Wagtail.—This is the common wagtail of the country; it breeds by all the rivers and mountain-streams. I have not noticed any material difference in the numbers of this bird in summer and winter. They were in full summer plumage by the first week in April: only the very old birds have the pure black throat, and it is seldom a specimen can be obtained without having a few light-coloured feathers on the throat; many of them have quite a mottled appearance: the females which I have seen have had only a few dark feathers indicating a dark throat.

Tree Pipit.—This bird made its appearance last spring by the 11th of April; it seems generally distributed, but is by no means numerous.

Meadow Pipit.—A constant resident, and numerous; it breeds on the mountains and bogs. I have seen this bird on the tops of the mountains, where, excepting the sky lark, it is the only bird to be seen; in such places I have often heard it singing, as it stood upon a stone or a bunch of heath. About September or the beginning of October it comes down into the more sheltered parts, following the plough in small flocks: they are constantly to be seen in the sheep-fold, running fearlessly about.

Sky Lark.—More numerous on the mountains than in the more enclosed parts; certainly not so common as in England, but I think there can be no doubt that we have an increase of numbers in the autumn, at which time they come more into the valleys.

Wood Lark.—Very generally distributed, and a constant resident; it is an early breeder. I saw a young one which could fly in the beginning of May, and I have every reason to believe there was a second brood, for in July four more young ones appeared, and they are now generally in the same locality with the old birds. They are now in small flocks of eight or ten, apparently family parties. During the severe weather last February a flock of five came into the yard, feeding by the stable-doors and in the cattle-yards: they were very tame, often allowing me to get within four or five yards of them. I have heard this bird singing every month throughout the year.

Common Bunting.—Not at all common; I only noticed it two or three times last spring. I have not seen it during the winter.

Yellow Bunting.—Not numerous, but more commonly seen in winter. I have seen flocks on the hills, feeding in the oat-stubbles during the autumn.

Chaffinch.—By far the most numerous of the Conirostres, exceeding in numbers all the others combined. I have not noticed any separation of the sexes, or addition to their numbers during the winter. I think this is the only small bird which is found here as numerous as in the South and East of England.

House Sparrow.—Comparatively a scarce bird: during the severe weather last February I did not notice more than three or four together at any time in the yards. Nothing has struck me more than the scarcity of this bird.

Greenfinch.—Rather more numerous than the house sparrow, but not common.

Goldfinch.—Common; I have seen as many as sixty or eighty in a flock in the autumn and winter, feeding upon the seeds of the grasses on the meadows.

Linnet.—A few breed on the hills, where the furze-bushes attain to any size.

Lesser Redpole.—I have seen one flock of about twenty this winter, on the 3rd of January; they were feeding on some alders near Cardigan.

Bullfinch.—Generally distributed; they appear to be more numerous during the winter, which I think is to be attributed to their leaving the woods at that season.

Starling.—Arrives about the middle of October in large flocks, leaving again in February. One pair stayed and bred about a mile from here last season; it was the only instance I heard of. It seems strange that they should leave during the breeding-season: it cannot be from the want of food, as in a damp climate like this worms are plentiful, and stone walls, thatched cottages and ruinous buildings are common enough to accommodate them.

Raven.—Frequently seen passing over, particularly during the spring.

Carrion Crow.—Distinguished here as the "farmer's crow." They are common and exceedingly destructive, particularly to the young lambs of the mountain sheep: it is surprising how quickly they kill them; stealing upon them when asleep they effect their object by first

tearing the eye out, and by repeated blows through the socket: they generally attack the young and weakly lambs.

Rook.—Common. The rooks from a large rookery near here pass this house every morning, in the direction of the mountains, for about three hours after daybreak, returning again just before dusk: they form a line further than the eye can reach in both directions, and at that time they are all past within an hour.

Jackdaw.—Common: generally in company with the rooks.

Magpie.—Very common, but so readily destroyed that I fear it will soon be a rarity; still, as there are large tracts of country without a gamekeeper, it has a chance for the present. It is a very destructive bird, and in many places is quite a pest. I have heard of a place in the extreme south of the principality, where they used to congregate at night like rooks: it took all the keeper's time to watch them, till some poison was laid, and the following morning he picked up two or three barrows' full of the dead birds. The country people are very superstitious, finding omens in numberless occurrences, and this bird is most carefully watched, as upon the number seen together, the direction of their flight, &c., depends a great deal of "good or bad luck."

Jay.—Not uncommon in the wooded districts.

Green Woodpecker.—Common in the wooded dingles; more so where there are old trees, particularly ash.

Wryneck.—I heard this bird for the first time on the 6th of April: it was not numerous at any time during the summer.

Common Creeper and Wren.—Common.

Cuckoo.—Common. It was seen and heard on the 10th of April. It appears to prefer the valleys to the more open districts.

Kingfisher.—Though I have not seen this bird, I have good authority for saying it is not uncommon by the rivers and streams.

Swallow.—Common. I saw four or five on the 11th of April.

Martin.—Not quite so common as the swallow. I did not notice any till the 4th of May.

Sand Martin.—I have only once seen this bird, where four or five were skimming over the river by Cardigan Bridge. There is no suitable place for them to build just here.

Swift.—I have only seen this bird once or twice: they were evidently wanderers.

Ring Dove.—Common, but not so numerous as in most parts of England.

Turtle Dove.—I have not seen this bird, but I am assured it breeds in the southern part of the county (Pembrokeshire).

Pheasant.—Where preserved they appear to do very well, and a fair day's shooting can be had for a fair day's work. In rearing them under hens a fresh place for the coops must be selected every year, or the young birds will be unhealthy and many of them die.

Black Grouse.—I have not seen this bird, but I am told that a few are to be found near Fishguard.

Red Grouse.—A wanderer from North Wales is occasionally shot, but I believe they do not breed here.

Partridge.—By no means numerous. I believe the climate is too damp for them to do well.

Golden Plover.—Common on the mountains during the winter. They were seen here last year by the second week in October.

Lapwing.—Occasionally seen during the winter in small flocks.

Heron.—Common during the autumn and winter.

Woodcock.—Common during the winter. The last two seasons they have not been so plentiful as usual. They are generally solitary, and mostly to be found about the same spot, in a plantation, and generally close to a stream. I am inclined to think the same birds remain with us till the spring.

Common Snipe.—Very numerous in some places, particularly in the south-west, where they are found in flocks.

Jack Snipe.—Common, but not so plentiful as the last, and more solitary in its habits.

Dunlin.—Common on the coast, particularly about the mouths of the rivers.

Land Rail.—Very common during the spring and summer, when they may be heard day and night, from April to August. The 20th of April was the first day I heard them last season. I had a nest and eggs brought to me in August.

Moorhen.—By no means so numerous as might be expected, this country being apparently so well suited to its wants and habits.

Wild Duck.—Very numerous in winter about the south-west coast. Many go inland during the day to large ponds and lakes, returning to the sea and mouths of rivers at night.

Teal.—Common during the winter, generally in company with wild ducks.

Widgeon.—Common, arriving later than the wild duck and teal.

Goosander.—Two fine adult males were killed near Newcastle-in-Emlyn during the severe weather in January, 1864.

Great Northern Diver.—A fine adult bird was shot in Milford Haven after the severe gale of the 2nd of December.

Common Gull.—Breeds on the coast. Before and after stormy weather they are often seen passing over this place.

Herring Gull.—After the severe weather last January three of these birds were, for a week, continually on a large grass-field near here: they were not at all shy.

In concluding this list, it must be understood to contain only those birds which I have seen, or for which I have undoubted authority: that many other species ought to be included I am quite sure, particularly amongst the sea-birds. The Stack Rocks below Pembroke are famous breeding-places of the guillemot, puffin, &c., but not having had an opportunity of seeing them I cannot name the birds which actually breed there. My observations have been confined to a rather limited district. The cultivated lands are to the north and east, the mountains to the south and west. I am at a loss to account for the general scarcity of small birds, particularly amongst the *Conirostres*, as there is some little corn grown, although it consists principally of oats.

THOMAS DIX.

Llwynbedw, Kenarth, Pembrokeshire,
January, 1866.

Ornithological Notes from West Sussex.

By W. JEFFERY, jun., Esq.

(Continued from Zool. S. S. 89.)

DECEMBER, 1865.

Blackbird.—I saw an unusually large number of these birds on our downs on the 3rd. It may be that the quantity of yew and other berries had attracted them there; but is there not reason to suppose that blackbirds, as well as other of our thrushes, migrate southwards as the winter comes on?

Fieldfare.—Small parties of these birds have appeared at times, principally during the early part of the month, but they do not seem to make any stay with us in the low grounds. I have not visited the

downs often enough to ascertain if they remain there. A specimen partly white was shot at or near Sidlesham on the 16th. The head white, with the exception of a band of the normal colour at the back part; neck, breast and belly nearly all white; back mixed with white, and several wing-primaries and tail-feathers white; the legs and feet also of two colours—black and a kind of flesh-colour.

Hen Harrier.—A female specimen of the hen harrier was shot on the 16th, on a marsh adjoining Pagham Harbour, just near what remains of Selsey Old Church, and has since found a place in my collection. The man who shot it, finding the neck very much distended with what appeared to be some part of a small bird, and thinking (the weather being close) that the harrier would keep better by his doing so, cut the skin off the neck, and removed the legs and part of the body of what he supposed to be a blackbird. On dissecting after skinning I found in the stomach three pairs of legs of birds, one pair having belonged to a sky lark, the other two pairs to some smaller birds; there was also the bill of a lark and one of a thrush, which latter may have belonged to the same bird as the legs which were taken from the neck: whether it be so or not, Mrs. Falco cyaneus appeared to have fared pretty well of late. It seems to me rather wonderful that so bulky a bird as the hen harrier should succeed in capturing these small birds. The general plumage of this specimen was rusty brown.

Purple Sandpiper.—One of these birds was shot at Pagham Harbour on the 16th.

Peewit and Golden Plover.—Large flocks of peewits seen at times throughout the month, also occasional flocks of golden plover in certain parts, but not nearly so numerous nor so widely dispersed as they were last winter.

Great Northern Diver.—On the 9th I obtained a specimen of the great northern diver, which had been killed on the coast a day or two before. From the size I take it to be a male—an adult male changing to winter plumage, the white spots on the back being irregularly dispersed, and the throat with only a few dark feathers remaining. The skins of two others, killed previously to the above date, have been prepared to be cut up for decorating ladies' hats: these were in about the same state of plumage as the specimen described above.

Pomarine Skua.—A specimen of the pomarine skua was captured in a singular manner in the neighbourhood of Rogate, as will be seen by the following paragraph from the 'West Sussex Gazette' of the

28th of December, 1865:—"A few days ago, as a young man named Collius was wheeling a barrow in a lane, loaded with flesh for dogs, he was suddenly startled by the appearance of a large bird alighting on the flesh and beginning rapidly to make a meal from it. The young man stepped back to the road-side, and took a long piece of string from his pocket with which to form a noose. The bird had flown a short distance during this operation. Two sticks were placed on the flesh, and the noose laid on them. With the end of the string in his hand he stood back three or four yards: the bird soon came back, and stepping into the noose was easily captured. It was kept several days alive, but, from being kept in so small a place, its feathers became worn. The bird was presented to Mr. A. E. Knox, the author of '*Ornithological Rambles in Sussex*,' and this gentleman has kindly supplied us with the following description:—"It is the only adult specimen of the pomarine skua I have ever met with in Sussex, the breast being of a dirty white, instead of the usual mottled brown, which is characteristic of the immature bird, and the tail long, until it was injured by confinement. The scientific name of the bird is *Lestris pomarinus*. The first example ever noticed in England was killed at Brighton, and was mentioned in the catalogue of Mr. Bullock's collection, which was sold in the year 1819.'"

W. JEFFERY, JUN.

Ratham, Chichester, February, 1866.

Merlin killed by flying against a Window.—On the 7th of February I received a most beautiful male merlin, which was found dead underneath a plate-glass window, on the lawn in front of Larbert House, the property of Mr. Gilbert Stirling. In all probability it had been killed, when chasing some small bird, by coming in contact with the thick glass, as no wound of any kind, save a weakness as from a bruise above the bill, was observable. It is a remarkably fine specimen.—*J. A. Harvie Brown; Dunipace House, Falkirk, February, 1866.*

Roughlegged Buzzard in Suffolk.—A nicely marked mature female of this species was killed at Mutford, near Lowestoft, in Suffolk, on the 25th of last month (January). It measured $21\frac{1}{2}$ inches in length from tip of beak to tip of tail, and 4 feet 7 inches across its extended wings to the extreme tip of each—this latter being 3 inches longer than the Rev. F. O. Morris gives in his description of this species in his work on British birds; tail $9\frac{1}{2}$ inches. The bird was in excellent plumage and condition; its body after being skinned proved to be completely cased with fat. Its stomach was empty, with the exception of a little muddy substance. Mature birds of this species are seldom met with in this county: the immature specimens are more frequent, sometimes more so than its near relative the common buzzard.—*T. E. Gunn; Norwich, February 2, 1866.*

Barn Owl hunting in Daylight.—The other day, about 10 miles west from Stirling, I was surprised to observe a barn owl systematically quartering a stubble field, in search no doubt of field mice, in broad daylight. I watched the bird for some time, and saw it alight on a cliff, in a wood about 200 yards off, from which position it soon afterwards renewed its hunting operations. I have repeatedly disturbed owls through the day, and seen them fly heavily away; but I never saw one voluntarily facing bright daylight in search of food, as this one undoubtedly was.—*J. A. Harvie Brown; Dunipace House, Falkirk, January 30, 1866.*

Grass Parroquet in Surrey.—I can furnish an instance of the occurrence of the grass parroquet (*Melopsittacus undulatus*) in the country, while those mentioned by Mr. Newman were all near London, where many common foreign cage birds may be seen. I saw one, in company with a flock of sparrows, near the village of Oxted, Surrey, on the 30th of September: one of the flock, I believe the parroquet, was caught by a male sparrowhawk, as it mobbed him; he caught it by turning over on his back and striking up at it with his talons, which is a way in which I have never before seen a hawk strike. Can any of your readers kindly tell me if this bird will breed in confinement readily, and what its breeding habits are, as I have long wished to found a colony of them, by exchanging some of our wild finches' eggs for theirs.—*M. R. Pryor; Godstone, Surrey, October 8, 1865.*

Great Gray Shrike in Stirlingshire.—While out taking a walk, on the 7th of February, I observed a bird rise from a thick hedge, carrying some object between its feet, nearly as it seemed half its own size. Not quite certain as to what the bird was I followed its flight, which was necessarily impeded by the weight it carried, and saw it alight on a hedge about 100 yards further off. I easily crept up to within 20 yards of where it sat. It was busily employed in tearing to pieces a blue titmouse, holding the bird between its feet, and not fixing it to any thorn or spike in the hedge. I at once saw what the bird was, and what I had before suspected it to be, viz., a great gray shrike (*Lanius excubitor*). Having no gun—as is often the case when it is most wanted—the bird escaped, bearing its prey along with it. This is the second I have seen here myself, and it is very rarely indeed that it makes its appearance in this district.—*J. A. Harvie Brown.*

Missel Thrush singing in December.—I never heard the missel thrush singing so early as at the present time. Not only one but I may say scores were heard, go where you would every day for this last fortnight.—*T. Last; Ipswich, December 19, 1865.*

Blackbirds singing in January.—On several occasions, about the middle of this month, I heard blackbirds singing in the evening.—*J. A. Harvie Brown.*

Rooks building in January.—Two pairs of rooks have been actively employed during the last few days in building their habitations in a tree at the end of the house, from a window of which I can observe without disturbing them. They continually are occupied in robbing the main part of the rookery, or carefully keeping watch over their own, as if suspicious of kindred tendencies in their neighbours. The nests a few days ago were mere shells; they are now, to outward appearance, perfect structures, and I do not despair of finding eggs in them ere long.—*Id.*

Blackcap in January.—I received a very fine specimen of the blackcap warbler, which a friend of mine had shot on the 26th of January last: it is an adult male bird, in very fine plumage. I think it is something unusual for it to be so far north in

January. It was feeding with some sparrows on a manure heap at Almondbury Bank.—*James Varley ; Almondbury Bank, Huddersfield, February 19, 1866.*

The villous Coating of the Cuckoo's Stomach.—Perusing Dr. Boulton's remarks on the villous coating of a cuckoo's stomach (Zool. 9782), it reminded me of a similar instance that passed under my notice during the latter part of May, 1864, and which I mentioned at page 147 of 'Young England' for that year. My specimen, like Dr. Boulton's, was also a bird of the year. Its stomach contained a few larvæ, including those of the "tiger moth," and a few remains of Coleoptera; part of the hairy covering of the former, being loose, was scattered over the inner membrane: these, when I had cleared the stomach, I found quite distinct from those that lined, and were firmly attached to the membrane itself: these latter were short and of a light reddish hue, while those of the tiger moth were long and brown. Summer is now fast approaching, and I trust we shall have further opportunities of investigating this important matter.—*T. E. Gunn ; West Pottergate, Norwich.*

The Gular Pouch of the Bustard.—In a scientific point of view, the great bustard is of much interest, from the dispute which exists respecting the presence or absence of a large pouch or bladder beneath the skin of the fore part of the neck. In respect to this matter a most interesting communication was made to the Zoological Society, on Tuesday evening last, by Mr. Flower, the curator of the museum of the College of Surgeons. Some naturalists have from time to time described this animal as possessing a very large sac or bag, situated under the skin of the throat, with an opening beneath the tongue. On the other hand, many of our most distinguished ornithologists have stated that the adult birds of both sexes which they have dissected showed not the slightest vestige of this singular formation. Mr. Flower, having recently received the carcase of a bustard from Kustendjie, carefully sought for the existence of this structure, and he exhibited the results of his investigation to the members of the Society. The dissection showed that beneath the tongue of this bird was an opening, into which the tip of the little finger might be passed. This led into a large sac, or bladder, capable of containing, without being distended, three or four pints of water. Two distinct issues are opened up by this interesting discovery, or perhaps I had better say re-discovery—firstly, what is the use of the pouch? secondly, how could it have escaped the notice of such men as Mitchell, Newton, &c., when they were especially looking for it? I do not believe any satisfactory answer can be given to the first question. The pouch does not communicate with the gullet, and what its use may be I am at a loss to conceive, although it has been suggested that the bird inflates it with air, and another theory is that it is a water-bag for the males to carry water to the females during incubation; but as the males altogether desert the females during this period, there can be but little foundation for this theory. The second question is almost as puzzling. Mr. Gould suggested that it might be developed only in particular seasons; but it seems almost impossible that an organ of such size could shrink so as to be invisible to the eyes of skilled observers. Dr. Gray expressed his opinion that perhaps two distinct species exist—one with and the other without a pouch, and that they had been confounded together under the same name. I know myself far too little about the facts to offer an opinion in the case; all that I can say is this, that my old friend, Mr. Yarrell, along with other naturalists many years ago, denied the existence of this structure, and that I have now seen it with my own eyes. It is precisely one of those cases where sportsmen can do good service to science.

The great bustard is extinct in England—it is still in existence on the plains of Asia and central Europe. Will any sportsman who shoots one cut off its head and neck (leaving the latter as long as possible), put them in spirit, and send them to England? I should be most happy to make the dissection if I were entrusted with the specimen. It should be borne in mind that the males only are credited with the possession of this singular structure. In order to avoid some confusion, I may add that in his 'British Birds' Mr. Yarrell figures the gular pouch of the great bustard, but in a subsequent communication to the Royal Society, in which he described the dissection of the animal, he denied the existence of the sac. Truly it is a puzzling question.—*W. B. Tegetmeier, in the 'Field' Newspaper.*

Moorhens perching in Trees.—With regard to moorhens perching in trees, I may mention that it is an everyday occurrence on the banks of the Boyne. This river is frequented by great numbers of these birds, which, when flushed from the marshy grounds on its borders, should there be no trees close at hand, invariably fly across the river and alight in the fir and thorn trees on the steep banks of the opposite sides. They do not remain long in the trees, but generally fly to the ground and creep about among the cover. I saw the other day more than a dozen in one whitethorn.—*W. Vincent Leggé; 48, Waterloo Road, Dublin.*

Purple Sandpiper at Eastbourne.—A man named Weller Sayers, fisherman, brought me (October 31st), for sale, three splendid purple sandpipers that he had just shot on the beach, near the Marine Parade. I never saw or handled one, in the flesh, before, but I feel confident that they occur here occasionally, but are overlooked.—*John Dutton, Eastbourne.*

American Bittern in Kent.—I saw to-day a stuffed specimen of the North American bittern (*Botaurus lentiginosa*) in the shop of Mr. Craig, birdstuffer, at Canterbury, who appeared to consider it as only a small example of the common bittern, and who informed me that it was killed, twelve years ago, about three miles from the city of Canterbury. As I had no means of testing the accuracy of this statement, and as the specimen was in bad order from dust and exposure, I did not inquire if it was for sale, but I think the circumstance of my having met with it worth naming, as it may give your ornithological readers in Kent an opportunity of inquiring further as to whether this specimen can be really identified as having been obtained in that county. I may add that I have only once seen this rare bird in the flesh, and that was in December, 1851, when a specimen, killed in Anglesea, was sent to London for preservation, and was shown to me before it was skinned.—*J. H. Gurney, in the 'Field' Newspaper.*

Great Northern Diver near Bridport.—On the 23rd of December a disabled specimen of the great northern diver was captured at Symondsburys, near Bridport, about three miles from the sea.—*J. L. Langdon Fulford; Bridport.*

Sea Birds at Malahide.—On the 31st of January I went to Malahide with a friend. The following were among the fowl we observed there, during a row on the lake at high water. The upper part of the lake was covered with large flocks of widgeon, with here and there a few brent geese. They were very shy and restless, getting up when we were within a quarter of a mile of them. The geese flew out to sea when put up. There were a few wild ducks in company with the widgeons. We saw and chased several great northern divers, but they dived to an immense distance. One fellow I observed on the wing several times: he would splash out of the water, flap along the

surface, lashing it up with the tips of his wings at every stroke, and then fall heavily into it, ploughing up the spray for several feet. Is not this rather unusual, as the bird was undisturbed at the time? We also saw one or two redthroated divers. Numbers of cormorants frequented the lake, flying in and out from the sea, but would not approach near enough for a shot. Flocks of curlews and lapwings were nesting on the shores. Of the gull tribe we saw blackheaded, kittiwake, herring and great black-backed gulls: the latter seemed to be tolerably plentiful at Malahide: we put up three or four at once, which seemed angry at being disturbed, for they soared over the boat in their magnificent flight, uttering loud cries, and then sailed away.—*W. Vincent Legge*; 48, *Waterloo Road, Dublin, February 5, 1866.*

Varieties of British Birds' Eggs.—In my collection of birds' eggs, I have several eggs which in their markings and variations from the general type are somewhat curious. It is curious to observe the different blotches and markings in the colouring, and the eccentric variations in the shape, of many of our common birds' eggs: a few such I give in the following list, which have come under my own eye, or are now in my collection:—

1. An egg of the blackheaded bunting, on one side of which two large blotches or marks, about one-third of an inch in height, take the form of the two letters *s i* with great exactitude. The *s* is almost perfect. The ground colour of the egg is very light, which shows off the marks to advantage.

2. Another egg of the same bird, of a light gray colour, and having small freckles of a darker tone at the larger end, and being entirely without any of the darker and characteristic spots.

3. Yet another egg of the same bird, which is in part a deformity. It is of a light delicate pink colour, which I think is partly owing to the thinness and transparency of the deformed shell. The shell is likewise covered with excrescences and chalky-looking lumps, making it quite rough. The egg feels brittle to the touch, if I may use the expression.

4. Two eggs of the tree pipit, which I think curious, and which were taken from the same nest, are much longer in shape than the type, are of a dull stone-colour, and have at the larger end a delicate black-pencilled line, very similar to those on the eggs of the sedge warbler. I never saw any such before or since, although perhaps no egg is more subject to variations than those of the tree pipit.

5. A hedge accenter's egg, which measures less in circumference round the middle than it does at the ends.

6. A house sparrow's egg, of somewhat the same nature, and another of the colour, size and shape of the meadow pipit's.

7. Rooks' eggs I have taken of most eccentric sizes, shapes and colours; some long and pointed at both ends, but still having one end larger than the other; others pear-shaped, and yet others almost round. I have seen rooks' eggs almost two inches and a half in length, and one or two, minus the yolk, not larger than a house sparrow's.

8. A common barn-door fowl hen, the other day, laid an egg of the common size, but marked all over with minute red spots like those on a turkey's egg. Another hen's egg weighed three ounces.

9. Of the eggs of the chaffinch I have some most beautifully and richly marked, and others of a pale blue, without a single mark whatever.

10. I took a nest of eggs of a blackbird (the bird was sitting on the nest) of a pale

blue colour, and entirely without spots. The nest was placed about a foot above the surface of a marsh, in a bush which was growing out of it.

11. A missel thrush's egg, which I took about four years ago, along with three other's, the same is much pointed at the smaller end, is of a beautiful dark blue, unstained by a single mark, save at the large end, where a zone of thickly plaited under-the-shell-like blotches encircle it. It is a beautiful egg, but I am sorry to say that since I took it the deep blue has faded very much.

12. A light blue or dirty whitish blue specimen of a Richardson's skua from Orkney.

13. An almost white specimen of a great northern diver's egg.

14. A kestrel's egg almost white, or more closely resembling a very light-coloured sparrowhawk's.

I could mention a few more, but the above are the most peculiar. The blue specimens of chaffinch's eggs are comparatively common, as well as others I have mentioned in this list, but some, I flatter myself, are not so, such as the common fowl's egg, the great northern divers, Richardson's skua's, tree pipit's, &c., as mentioned above.—*J. A. Harvie Brown.*

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

Anniversary Meeting, January 22, 1866.—F. P. PASCOE, Esq., President, in the chair.

An Abstract of the Treasurer's Accounts for 1865 was read by Mr. Wilkinson, one of the Auditors, and showed a balance in favour of the Society of £78 11s. 10d.

The following gentlemen were elected to form the Council for 1866 (namely):—Sir John Lubbock, Messrs. Bates, Dunning, McLachlan, Moore, Pascoe, W. W. Saunders, Edwin Shepherd, A. F. Sheppard, S. Stevens, Alfred R. Wallace, J. J. Weir, and Prof. Westwood.

The following Officers for 1866 were afterwards elected (namely):—President, Sir John Lubbock, Bart., F.R.S., &c.; Treasurer, Mr. S. Stevens; Secretaries, Messrs. Edwin Shepherd and Dunning; Librarian, Mr. Janson.

The President announced that one of the Prizes offered for Essays of sufficient merit on Economic Entomology had been awarded to Alexander Wallace, Esq., M.D., M.R.C.P., of Beverley House, Colchester, for his Memoir "On Ailanthiculture."

The President then read the annual Address on the present position and future prospects of the Society, &c.

A vote of thanks to Mr. Pascoe for his conduct in the chair was carried by acclamation, and he was requested to allow his Address to be published in the Journal of Proceedings. The vote was appropriately acknowledged, and the request acceded to.

A vote of thanks to the other Officers for 1865 was also carried, and acknowledged by Mr. S. Stevens and Mr. Dunning.

February 5, 1866.—Sir JOHN LUBBOCK, Bart., F.R.S., &c., President, in the Chair.

The President thanked the Society for having elected him to occupy the Chair, and nominated as his Vice-Presidents, Messrs. W. W. Saunders, Westwood and Pascoe.

Prize Essays.

The Prize awarded by the Council for an Essay "On Ailanthiculture" was presented by the President to the author, Dr. Alexander Wallace; and it was announced that the Council renewed the offer of last year, and would give Two Prizes of the value of Five Guineas each to the authors of Essays or Memoirs, of sufficient merit and drawn up from personal observation, on the anatomy, economy, or habits of any insect or group of insects which is in any way especially serviceable or obnoxious to mankind. The Essays should be illustrated by figures of the insects in their different states, and (if the species be noxious) must show the results of actual experiments made for the prevention of their attacks or the destruction of the insects themselves. On some former occasions the Council has selected a definite subject, as *e.g.*, the Coccus of the Pine Apple, the larva of *Agrotis Segetum* (the large caterpillar of the turnip), &c., but on the present occasion the selection is left to the candidates themselves, provided only that the subject be one fairly belonging to the Economic branch of Entomology. The Essays must be sent to the Secretary at No. 12, Bedford Row, indorsed with mottoes, on or before the 30th November, 1866, when they will be referred to a Committee to decide upon their merits; each must be accompanied by a sealed letter indorsed with the motto adopted by its author, and inclosing his name and address. The Prize Essays shall be the property of, and will be published by, the Society.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'The Transactions of the Entomological Society of New South Wales,' Vol. i., Part 4; presented by the Society. 'The Entomologist,' vol. ii.; by the Editor, E. Newman, Esq. 'On the Fossil Insects from Illinois, the *Miamia* and *Hemeristia*,' by Samuel H. Scudder; by the Author. 'Exotic Butterflies,' Part 57, by W. C. Hewitson; by W. W. Saunders, Esq. A Catalogue of the Lepidoptera of Devon and Cornwall,' by J. J. Reading, Part III.; by the Author. 'Proceedings of the Royal Society,' Nos. 79 and 80; by the Society. 'The Entomologist's Annual,' for 1866; by H. T. Stainton, Esq. 'Stettiner Entomologische Zeitung,' 1866, Nos. 1—3; by the Entomological Society of Stettin. 'The Zoologist,' for February; by the Editor. 'The Entomologist's Monthly Magazine' for February; by the Editors.

Election of Honorary Members.

MM. Guérin-Mèneville, of Paris, and Boheman, of Stockholm, were severally ballotted for and elected Honorary Members.

Exhibitions, &c.

Mr. Dorville sent for exhibition a male specimen of *Sterrha sacraria*, captured by him at Alplington, near Exeter, at sugar, in August last (see Ent. Mo. Mag. ii. 115);

a gigantic *Vanessa Cardui*, measuring 2 inches and 10 lines in expanse, and having a black spot in the pale band at the anal angle of the anterior wings; a variety of *Argynnis Selene*, wanting many of the ordinary black markings of the upper side, and with the under side of the hind wings very abnormal; a female *Satyrus Tithonus* having an additional ocellated spot on the anterior wings; a female *Agrotis segetum*, with the anterior wings nearly black; and a variety of *Triphæna orbona* with mottled anterior wings, and with the posterior wings very pale yellow.

Mr. S. Stevens exhibited a male of *Papilio Semperi*, from the Philippines, with black wings and a bright scarlet body; the body of the female being grey.

Prof. Westwood exhibited a pair of the dog-tick, *Ixodes plumbeus*, which he had kept without food in a glass tube for twelve months, having taken them away with him from the Meeting of this Society held on the 6th February, 1865, (see 'Proceedings,' 1865, p. 82). Shortly afterwards numbers of young ones were observed in the tube, but they soon died; the tube however was now again thronged with young in the hexapod state. The female parent was no longer living.

Prof. Westwood also exhibited a larva with long filaments at the sides of the body, which he at first thought to be Neuropterous (*Sialis*), and afterwards Lepidopterous (*Hydrocampa*), but which from examination of De Geer's figures he believed to be Dipterous, and probably the larva of *Tipula replicata*. It was found in damp moss in Derbyshire, and there was no doubt that the filaments were branchial and connected with respiration.

The President remarked upon the apparent absence or scarcity of tracheæ in these branchial apparatus.

The President exhibited magnified coloured drawings of two larvæ, and requested information to what insects they belonged. Except that one was Lepidopterous, and the other probably Coleopterous, no light was thrown upon the subject.

Mr. W. W. Saunders exhibited a box full of *Heliconiæ*, "all taken together in the same locality" at Cayenne, including forms which have been described under seven or eight specific names; the examination of these specimens had convinced him that all of them were referable to a single species, *H. Melpomene*, or at most to two species; the structure and general form were constant, whilst the colour varied enormously, so that if his conclusion were correct colour must henceforth be considered as of small specific value amongst butterflies.

Mr. Bates said that he had found nearly the whole of the same forms on the Amazons, and had come to the conclusion that there were three species, *Heliconia Melpomene*, *H. Thelxiope*, and *H. Vesta*, but that the majority were merely intermediate varieties. In their typical states those three were perfectly distinct, did not interbreed, and no connecting links were found. For a distance of 1800 miles up the Amazons, *Heliconias* occurred everywhere, but the intermediate varieties were found in only one locality, on the hilly mainland of or adjoining Guyana, at the other extremity of which was Cayenne. The three species occurred in the forests, but the varieties did not. He had endeavoured to investigate the question whether the species interbred, and whether the varieties were the result, and had satisfied himself that the varieties were not hybrids. He thought that the insects were unstable, vacillating species; *H. Melpomene*, *Thelxiope*, and *Vesta* had become segregated in the alluvial plains, and might now be considered as species, though in his opinion they themselves were the descendants of some one prior unstable form which was their common

ancestor. He conceived that the whole phenomena, both of the formation or development of the different species and the existence of the intermediate varieties, were explicable on the broad principle that an insect, in disseminating itself over a wide area, adjusts or accommodates itself to local conditions.

Mr. Saunders remarked that the *Heliconiæ* exhibited were all from the same locality, and therefore presumably had been subjected to like conditions.

Mr. Bates admitted that many different varieties were found in one spot; but as local variation was not the only form of variation, such collocated varieties might be produced by causes similar to those which produced the remarkable diversity between the offspring of some of our domestic animals.

Dr. Alex. Wallace said that the course which the discussion had taken led him to enquire whether *Bombyx Ricini* and *Bombyx Cynthia* were distinct species; the two insects interbred, and the hybrids were fertile and bred on for generations, not only amongst themselves, but with either of the parent forms. And yet *B. Ricini* was from Bengal and fed on *Ricinus communis*; *B. Cynthia* from China and fed on *Ailanthus glandulosa*; they differed in the egg, in the colour of the larvæ, in the shape of the cocoon, in the quality of the silk, in the imago, and in their habits.

B. Ricini produced six or seven generations in the year, and was too fertile for this country, since it could not be prevented from hatching in winter when no food for the larvæ was obtainable; whilst *B. Cynthia*, though last year it had produced four generations in France, in an ordinary season produced only two, and perhaps a single generation would be the rule in this climate.

Mr. J. J. Weir enquired on which plant the hybrids fed? Dr. Wallace replied, on both or either indifferently.

Mr. F. Smith said that the remarks he had made at a previous Meeting, (see 'Proceedings,' 1865, p. 130), as to the tapping noise alleged to be made by "death-watches," had induced Mr. Henry Doubleday to send him an account which shewed that his (Mr. Smith's) doubt was, as to *Anobium* at all events, unfounded. Mr. Doubleday, under date of Epping, 31st Dec. 1865, wrote as follows:—

"I cannot speak positively about the *Atropos*, but I am strongly inclined to believe that it is the insect which produces the continuous faint ticking sound so frequently heard in the spring. It seems almost impossible that such a delicate little creature should be able to produce any sound whatever, but I have always found it in places from which the ticking sound appeared to proceed. I have often thought it very wonderful that the pied woodpecker can, by striking the branch of a tree with its beak, produce a sound which may be heard for half a mile; we could not produce a similar sound by striking the tree with a stick or anything else. I can speak positively with regard to the *Anobium*, and I assure you that this little beetle produces the loud ticking sound, by raising itself upon its legs as high as it can, and then striking the head and under part of the thorax against the substance upon which it is standing, generally about five or six times in rapid succession; and it always chooses a substance which produces the most sound. It is evidently a call-note from one individual to another, as you very rarely hear one rap without its being immediately answered by another. I have repeatedly kept one in a card pill-box, and if I imitated the sound, by tapping anything with a pointed pencil or something of that kind, the *Anobium* would instantly answer me. This insect is common in our house, but it is not very easy to obtain them, as, when you have found out by their rapping where they

are, they drop the instant you move anything near them. If all is well I will endeavour to obtain you some bye-and-bye, and send them to you alive."

Dr. Alexr. Wallace mentioned, that on recently repairing the roof of an old church at Colchester, which had been attacked by *Anobium*, it was found that the damage was chiefly confined to the south side, the other sides being but slightly affected; this was the case both with the nave and aisles. Could it be that the beetles selected the south side from its greater warmth?

Mr. McLachlan enquired if the same description of wood was used throughout? Dr. Wallace believed so; all that he saw was oak.

Prof. Westwood said, if it were oak the depredator was doubtless *Anobium tessellatum*; there might be other reasons than the warmth which took the beetles to the south side; the prevalence of particular winds, or greater exposure to rain, might make the wood more liable to decay, or more attractive and palatable to the insects.

Mr. Stainton announced with regret the recent death of Senator von Heyden, of Frankfort, from an accidental fall, in the 73rd year of his age.

Mr. Stainton also announced the arrival of Mr. Wollaston at the Cape de Verdes: the examination of two small islands had already yielded 150 species of Coleoptera.

Prof. Westwood mentioned that in the *Stett. Ent. Zeit.* just published was a figure of a gynandromorphous *Dytiscus* (male on the right side, female on the left), very much resembling that described and figured by him in the third vol. of the 'Transactions,' p. 203, pl. xi. Mr. McLachlan added that, in the same publication, a gynandromorphous *Argynnis Paphia* was mentioned, the right side of which was female and the left side male, and which had this additional peculiarity that the female portion was of the form known as var. *Valesina*. Prof. Westwood said that a similar gynandromorphous variety had been recorded in the publications of one of the Belgian societies.

Papers read.

Mr. Baly communicated the concluding portion of his paper entitled "New Genera and Species of *Gallerucidæ*"; containing descriptions of four new species of the genus *Cerotoma*.

Mr. Hewitson communicated the concluding portion of his paper entitled "Descriptions of New Species of *Hesperidæ*"; comprising seventeen additional species of the genus *Hesperia*.—*J. W. D.*

Colias Edusa in Ireland.—In September last, when taking a walk round the Hill of Howth, on the north side of Dublin Bay, I was both surprised and pleased to see *Colias Edusa*, formerly familiar to me in the Isle of Wight. I caught one specimen on Howth, just to make sure of the species, and a few days afterwards again met with this beautiful butterfly near Malahide, a little further north, on the Dublin coast.—*A. G. More; December, 1865.*

Polyommatus Hippothoe and Limenitis Camilla in Ireland.—Some years since, when botanizing in the county of Kerry, at the south-eastern extremity of Castlemaine Harbour, where extensive marshes stretch towards Milltown, Mr. Andrews noticed a swift-flying insect, which he had attempted to capture: from its size and brilliancy of colour he was satisfied that it could be none other but the large copper butterfly

(*Chrysophanus* or *Lycæna Dispar*); having no net, and the drains being wide, it escaped. It is now twenty years since, when rambling through the wood of Tarbert demesne, in Kerry, that Mr. Andrews had met with a specimen of *Limenitis Sybilla*. In a sheltered glade, bounded by oak and hazel, the insect was captured. The day was sunny, but the wind being strong, prevented a high flight, which it several times attempted. The different species of Fritillary, with the red admiral and the peacock, were in swarms.—*From a paper, by Mr. Andrews, intituled "Notes on Irish Lepidoptera," read at a Meeting of the Natural History Society of Dublin.*

[The insect which Mr. Andrews has denominated *L. Sybilla* has been carefully examined and turned out to be *L. Camilla*, never before taken in the British Islands. I cannot but congratulate Mr. Andrews on these grand additions to the Irish insect fauna.—*E. Newman.*]

Badger at Melton.—A three-quarter grown male example of this species was killed in the vicinity of Melton on the 26th of July, 1865. In examining it a greater portion of its under parts I observed to be completely covered with ticks, which were extremely difficult to remove without injuring them, so firmly were they attached to the animal's skin, which they seemed to pierce, and to bury their heads out of sight.—*T. E. Gunn; Norwich.*

Otter feeding in Gardens.—In reply to Mr. Alston's query (Zool. S. S. 11) respecting my remarks on the depredations committed by this species on the land, "particularly in vegetable gardens" in the vicinity of various watering-places (Zool. 9644), I beg to say I have been informed, on two or three occasions, by persons residing in those districts where otters abound, that when deprived of sustenance from their usual element, they will turn their attention to the land, root up the vegetables and partly devour some of the leaves as well as the roots, but they generally spoil more than they eat. I am also informed that it is sometimes caught in the midst of its depredations by traps set by the enraged garden owners: when this is the case no mercy is shown the poor brutes: this much I have received from one informant, and should I have further opportunities of investigating this matter, either by dissecting individuals that pass through my hands or otherwise, I shall feel great pleasure in confirming the above, and recording any further interesting matter connected therewith in the pages of the 'Zoologist.'—*Id.*

Otters near Norwich.—A three-quarter grown female of this species was killed in the stream that runs through the villages of Eaton and Cringleford, two miles from Norwich, on the 16th of October, 1865. A similar occurrence took place the previous season in the same locality.—*Id.*

Water Vole at Earham, Norfolk.—A nearly black specimen of the water vole was obtained at Earham during last summer (1865).—*Id.*

Curious Variety of the Bank Vole near Norwich.—A peculiar variety was killed by two lads in the neighbourhood of Norwich last autumn. It was brought to one of our birdstuffers, of whom I have lately purchased it. The whole surface of its coat is of a very pale ash grayish tint; eyes pink. It measures twelve inches from the tip of the nose to the extremity of the tail, this latter being one-third of its entire length. Its incisors, three in number (it having lost the fourth) also presented rather an unusual appearance, by curving inwards for three-quarters of an inch.—*Id.*

‘Coleoptera Atlantidum ; being an Enumeration of the Coleopterous Insects of the Madeiras, Salvages and Canaries.’ By T. VERNON WOLLASTON. London : Van Voorst, Paternoster Row. 1865. 660 pp. demy 8vo.

WHATEVER Mr. Wollaston undertakes he does thoroughly ; no part is neglected ; nothing is slurred over on account of its difficulty ; no trouble is spared to make the whole complete : nothing that a fellow-labourer has done is either ignored or looked down on from a magnificent height, as if it really was not worth looking at. Another character of Mr. Wollaston's labours is that they contain such abundant evidence of thought ; he is the Stuart Mill of Entomology, and one of the very, very few entomologists who avail themselves of the power of reflection in arriving at conclusions. It is perhaps a general characteristic of the writing and speaking entomologist of to-day that he reaches conclusions without passing through the slow process of reasoning, just as Philacthus represents angels as visiting earth without passing over the intermediate space. How often are we not startled at deductions from nothing ! words and sentences that have no base to rest on, reminding one of those creatures which I suppose to have been once abundant from their multitudinous effigies in paintings and on tombstones, that have wings to fly with and mouth to talk with, but nothing to stand with, or, for matter of that, nothing to sit with. As we progress in the act of sifting evidence these restless beings seem to lose their reality, and it is more than probable that those entomologists who write and talk on every subject without thinking, will eventually, like the cherubs, lose their influence over our imagination.

There is one slight drawback to Mr. Wollaston's general style that doubtless I have previously pointed out—the interruption which occurs from the too frequent use of parentheses : these parenthetical observations are always to the point, often invaluable, but might have been introduced without interrupting the general arrangement of the matter. I find that the best and most agreeable writers rarely avail themselves of printers' contrivances, as parentheses, italics, notes of admiration, and so forth, but trust to the natural and unembarrassed expression of ideas which flow in a consecutive and uninterrupted stream. Who is there that has not felt the disagreeable effects of a carriage while occasionally passing over loose stones on a road other-

wise smooth; very much the same effect is produced by the jolting of parentheses. This is a mere nothing, and detracts little from the value of the work; the sun has his spots, but who does not acknowledge his genial influence.

In the day out of which we are now passing, it was very much the habit to take nothing for granted; but now we are falling into the opposite extreme of adopting unquestioned the hypotheses of others, merely because they afford us scientific capital without the trouble of learning; materials for talking without the labour of thinking: and the most remarkable feature in this New Dispensation of Natural History is that we father our slippancies on the most profound and most thoughtful of all living naturalists, even on Mr. Darwin himself. Who amongst us is not continually bored with the puerility, "I don't believe in species; you should read Darwin?" I scarcely know a juvenile naturalist but repeats this cuckoo cry. Now Mr. Wollaston is the man of all others to establish this non-belief in species, if species really do not exist; but we gather another moral from his writings; we learn how greatly a species may vary, and how many causes may conduce to this variation, and yet be a species nevertheless. It is Mr. Wollaston's peculiar talent to treat this question with a masterly hand. The argument used by our colts is this: take half-a-dozen forms of *Carabus*, which different entomologists have named *albipes*, *pallipes*, *rufipes*, *picipes*, *fuscipes* and *nigripes*; events occur which prove incontestibly that *albipes* is the male of *pallipes*; *pallipes* a pale-legged variety of *rufipes*; *rufipes* a geographical form of *picipes*; *picipes* an alpine race of *fuscipes*; and *fuscipes* a mere accidental variation of *nigripes*. Our colt avails himself of the labours of those workers who have established these facts, and cries, "All these species must sink; indeed I don't believe in species at all." Now the thinker would stop half-way; he would argue that "all these species must sink," but he would draw no rash generalization: he would say entomologists had been too hasty in "making" species, that is, in founding them on the altered colour of legs, but he would not conclude that Nature had not made species because man had fumbled in their differentiation. A case in point: at the last Meeting of the Entomological Society Mr. Saunders exhibited a very beautiful series of *Heliconia*, "all taken in the same locality, and including forms which had been described under seven or eight specific names; the examination of these specimens had convinced him that all of them were referable to a single species, *H. Melpomene*, or at most to two

species; the structure and general form were constant, while the colour varied enormously." This solution, so very rational and obvious, met with no favour, and the subject was finally left in an impenetrable fog: it was exactly one of those cases in which the self-styled "non-believers in species" appear to revel.

But even Mr. Saunders, although so exceptionally free from the errors of speculators, is scarcely liberal enough in his allowance for variation. Constancy "of form and structure" are by no means essential to specific identity, as we may see every day in *Lucanus Cervus* and a hundred other *Coleoptera*. In fine, we must abandon all our foregone conclusions, and look up to Nature as our tutor, instead of inviting her to receive our instructions as a student.

On the question of species Mr. Wollaston is particularly strong, and lucid as strong. "That there are positive limits (even though, *by the nature of the case*, undefinable) between which all species are free to become modified has generally been received as an axiom; nor has this primary truth been so much as touched by the ascertained fact that the permitted range for certain forms (when systematically acted upon by the skill and intellect of man) is so extremely wide, in comparison with that allowed in the case of others, as to be practically almost infinite. And consequently, if it ever should be shown that we have fallen largely into error in regarding certain closely allied organisms as specifically distinct, I would surmise that it proves absolutely nothing except the fact of our own ignorance as to where the proper lines of demarcation are to be drawn. But that those lines have an (abstract) existence somewhere I take for granted: and it is the province of the naturalist to endeavour to obtain an approximate idea, so far as may be, and so far as his limited experience will permit, of their general positions:" and again, in a foot-note, Mr. Wollaston says, "I infer *that variation may have full play, and be by us undefinable*, and yet positively restrained within the limits which were imposed upon it aboriginally for each separate species; and therefore conversely that a species may be indefinitely plastic, and yet remain *true to its type*." These are golden words, and will endure when all the crude and ill-considered assertions of modern naturalists have again subsided into that oblivion whence they should never have emerged.

The coleopterous fauna of the Atlantides, as now ascertained, comprises 1449 species, which Mr. Wollaston thus divides into sections:—

| | Species. |
|--------------------------|----------|
| Rhynchophora | 282 |
| Necrophaga | 219 |
| Brachelytra | 215 |
| Geodephaga | 188 |
| Heteromera | 172 |
| Priocerata | 135 |
| Phytophaga | 64 |
| Cordylocerata | 64 |
| Pseudotrimeria | 30 |
| Philhydrida | 29 |
| Hydradephaga | 29 |
| Eucerata | 22 |
| | <hr/> |
| | 1449 |

There is nothing more interesting in the Atlantic list of Coleoptera than the absence of certain familiar forms, dominant under very similar conditions in various parts of the globe: thus the family Cetoniidæ has no existence at all in Madeira, although it has ten representatives in Canary: the Elateridæ have no existence in Madeira: the Cicindelidæ have not a single representative in either of the islands, and the Buprestidæ have but one, a unique but truly indigenous *Agrilus* captured by Mr. Wollaston in 1855. The commonplace genera, *Nebria*, *Carabus*, *Silpha*, *Hispa*, *Zophosis*, *Tentyria*, *Pimelia*, *Cossypus* and *Ocypus* are absent from Madeira, but well represented in the Canaries. No less than twenty-two species of Coleoptera have been detected in which the eyes are either totally absent or so rudimentary and imperfect as to be practically useless.

I cannot close this truly instructive volume without glancing at a remarkable feature of the Atlantic fauna, which has a direct and important bearing on a subject on which I have elsewhere expressed very decided opinions: I allude to the rapid extinction of species which is now in progress all over the earth's surface. The Euphorbiaceæ are a natural order of plants widely distributed over the Atlantic Archipelago, and have acquired in the Canarian group a most marvellous ascendancy; in the Grand Canary large tracts are entirely clothed with them, and some of them have attained such gigantic stature as to be comparable to gnarled oaks. In the dead and dying stems of these Euphorbiæ Coleoptera take up their abode by thousands. Mr. Wollaston discovered no less than fifty species which appear to be exclusively Euphorbia-infesting in their habits, but what struck him as most remarkable was the incredible mass of individuals by which

these species are represented: in some instances the decayed stalks and branches seemed absolutely alive with them. Notwithstanding this wonderful profusion each species is rigidly confined to the particular species of *Euphorbia*, which it infests, and is never found elsewhere or met with under any other circumstances. Now the vast multitude of quaint and grotesque shrubs on which this strange coleopterous fauna exclusively subsists is passing away, gradually but certainly becoming extinct: "Year after year sees portions of the rocky declivities brought into rude cultivation, whilst the constant search which is made after the dead plants for fuel still further operates to direct the axe of the destroyer. Here then," continues Mr. Wollaston, "we have an unmistakeable fact, and one over which it is worth while to pause, not of a single species, but of a *whole fauna* surely dying out before circumstances which are adverse to its continuance." The species infesting a particular species of *Euphorbia* pertinaciously refuse to adapt themselves to altered circumstances when that species is destroyed. In two of the islands, Lanzarota and Fuerteventura, *Euphorbia canariensis* is already extinct, and not one of the species which characterized that plant has migrated to any other; so that in two islands at least the Coleoptera attached to *Euphorbia canariensis* have become extinct.

In conclusion, I can only express my regret that the utility of a volume so full of deep research, and such profound reflections, should be confined by its very character to the few who combine a knowledge of Entomology with more general and extended information: it is a volume the teachings of which are for the world of science, and not for that limited section of the scientific world which has made the Natural History of Insects its exclusive study.

EDWARD NEWMAN.

'*The Natural History of the Tineina.*' Vol. VIII., containing *Gracilaria*, Part I., and *Ornix*, Part I. By H. T. STAINTON, assisted by J. W. DOUGLAS and Professor FREY. London: Van Voorst, Paternoster Row. 315 pp. letter-press; eight coloured Plates. Price to subscribers 12s. 6d.

In this beautiful volume we have illustrated life-histories of fifteen species of *Gracilaria* and nine of *Ornix*. Its appearance "has been retarded, owing to the delay in meeting with the larva of *Gracilaria imperiella*. The next two volumes will each contain twenty-four

species of the genus *Gelechia*." The plates leave nothing to be desired, and the work altogether well maintains its character for excellence. An analytical notice will be found in No. 2 of the 'Entomologist.'

EDWARD NEWMAN.

'The Food, Use and Beauty of British Birds: an Essay.' By CHARLES OTTLEY GROOM NAPIER. London: Groombridge. 1865. 83 pp. 12mo. Price 3s. 6d.

A TRACT written with the best intention, that of modifying in some degree the senseless destruction of birds which is going on all round us; but a question very naturally arises in the mind, how is such a tract to get into circulation? and how, without getting into circulation, is it to do good? Will the bird-shooters and the bird-poisoners and the sparrow clubs give three and sixpence for a tract that is directly antagonistic not only to the acts and professions, but to the religiously cherished belief in the noxious qualities of birds?

The subjoined paragraph, which I extract entire, states the evil as it exists, and the authors's idea of a remedy:—

"The extinction of species in their various haunts, the cliff, the shore, the islet, the grove, the marsh and the mountain, calls for inquiry. First, ought these birds to be extirpated or not? If so, I have argued in vain. If the balance in creation is to be preserved, let man disturb it as little unnecessarily as he can. If birds are ever worth destroying by a sporting population—and every man who carries a gun is in some sense a sportsman—let them not be wantonly molested in the breeding-season. A small tax for the right of shooting birds not commonly considered game, would produce a revenue sufficient for the maintenance of efficient guardians of our feathered tribes, whose great services would thus meet with a tardy acknowledgment. Two shillings and sixpence annually for the privilege of shooting sparrows, not inclusive of the rights of private property, would be sufficient for this."

EDWARD NEWMAN.

A Climbing Rat.—As I was passing by a hawthorn hedge, during one of my walks in the country, my attention was attracted by a nibbling sound coming from the

bushes. On looking I saw a large barn rat in the bush clasping one of the branches, and seemingly as much at home as if he might be a regular visitant there. The bushes were covered with haws, many of which were partially eaten, and some of them had nothing but the stone left. It was these delicacies, doubtless, which had tempted him to perform so unusual a feat. I had a good opportunity of observing him, as he stood perfectly still for a minute or two, intently regarding me with his bead-like eyes. He then ran nimbly to the ground, passing through several bushes in a line with the hedge. I saw the characteristic grayish brown coat and the long ears and tail, which serve to distinguish this from the water rat. I have twice seen it in the same position and the same place.—*John Peers.*

Notes on the Quadrupeds of Lanarkshire.

By EDWARD R. ALSTON, Esq.

(Continued from Zool. S. S. 61.)

Common Weasel.—On the 8th of January a weasel was caught here which presented a curious appearance. The whole back was quite bare, and the naked parts were covered with a bright scarlet eruption, probably allied to the “red mange” of the canine tribe.

Stoat or Ermine.—I am indebted to my friend Mr. R. Gray, Secretary of the Natural History Society of Glasgow, for the following interesting anecdote of this species. Writing on the 17th of January, he says:—“A few days ago I got from a keeper in this neighbourhood (Kirimuir, Forfarshire) a very good illustration of the rapacity of this species. He was walking across some fields near the town, when his attention was drawn by a ploughman to the erratic flight of a duck overhead. Keeping his eye on the bird, which at first was wheeling in curious gyrations high in the air, he waited till it neared the marsh, where he stood, and shot it, when, to his surprise, he found a stoat clinging to its neck. The little brute at once ran off on being disturbed, but a shot from the other barrel checked his flight, and I have now both the duck and ermine in my possession. The bird is a female mallard, and its bloodthirsty assailant is pure white, except the face, which is of the usual reddish brown. I intend exhibiting the pair at an early meeting of our Society. Instances like this have been already recorded of both the ermine and weasel, but it is sometimes difficult to get the occurrence authenticated; in the present case it is fortunate I was on the spot.”

Bank Vole.—Since my notice of the occurrence of *Arvicola pratensis* in Scotland was written (Zool. S. S. 9) several more examples

have been taken, all of which were caught in common mouse-traps in the garden, where the species appears to be even more plentiful than the field vole. These repeated captures of an animal hitherto unrecorded in Scotland made me begin to doubt whether I had not made some mistake as to the species; accordingly I forwarded a specimen to Professor Bell, who has been kind enough to examine it carefully, and he informs me that it is undoubtedly the bank vole; "the colour, the proportions and the *loose hairiness* of the tail, all agree with *A. pratensis*, and differ from the common species." Mr. Wheelwright ("The Old Bushman"), states, in his 'Ten Years in Sweden,' that this species is found in Scandinavia as far north as the Arctic Circle, so it seems not unlikely that it may be more common in Scotland than in England. Besides the distinctive marks already mentioned (Zool. S. S. 10) the fur of *A. pratensis* is much smoother and glossier than that of the field vole, and in all the specimens taken here there is a little fine white fur behind each ear, only visible when these organs are erected. The shade of chestnut on the head and back varies much; in some it is hardly brighter than in a small and unusually red example of *A. agrestis* sent me from Sussex by your correspondent, Mr. Jeffery; in one individual it deepens almost to black towards the root of the tail. In another specimen the white of the lower parts is slightly tinged with yellow. The tail is always uniform in thickness throughout its length, and ends in a tuft of hair; it becomes more slender in dried specimens. In size there is not much variety, but the males are slightly larger than their mates. The following are the average measurements of those taken here:—

| | | Male. | Female. |
|-----------------------------------|--|--------------|--------------|
| Length of the head and body . . . | | 3.50 inches. | 3.40 inches. |
| " head . . . | | 1.10 " | 1.08 " |
| " ears . . . | | 0.40 " | 0.40 " |
| " tail . . . | | 1.54 " | 1.50 " |
| " hind foot . . . | | 0.62 " | 0.58 " |

It is perhaps worthy of notice that this species has been found abundantly *in gardens*, both here and in Derbyshire (Zool. 9016).

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, February, 1866.

Ornithological Notes from Shropshire. By JOHN ROCKE, Esq.

(Continued from Zool. S. S. 84.)

Gray Lag Goose (*Anser ferus*).—Whatever may have been the distribution of this goose over the county formerly, I consider it now to be quite one of our rarest visitants. It has, however, been occasionally met with, though I am not aware of any very recent capture. I believe it is seldom met with in the present day, even in those parts of England that most abound in wildfowl.

Bean Goose (*A. Segetum*). A flock of eight of these birds were continually seen in this district in the very severe winter of 1861, and three of them fell to the gun of the Oakly Park keeper, but were not preserved. I have seen several other instances of their occurrence, perhaps more frequently than that of any other of our Anatidæ.

Pinkfooted Goose (*A. phœnicopus*).—This rare bird has been killed once in this county, near Hodnet.

Whitefronted Goose (*A. albifrons*).—Not uncommon, especially in hard winters, though I believe all this class of birds is becoming much less numerous (if we except the lower part of the River Severn) than heretofore.

Bernicle Goose (*A. leucopsis*).—Very rare, but occasionally met with in the winter.

Brent Goose (*A. torquatus*).—Equally rare with the preceding bird. Mr. John Shaw mentions one example killed in January, 1861, as occurring near Shrewsbury, recorded at Zool. 7388.

Egyptian Goose (*A. Egyptiacus*).—A few specimens have been obtained at intervals, more particularly on the River Severn. I had a good example once myself, killed near Shrewsbury, which did not exhibit the least signs of having been domesticated, or of having escaped from confinement.

Canada Goose (*A. canadensis*).—This bird has been for so many years a constant occupant of our various ornamental meres and ponds that I think it can now scarcely be looked upon as a straggler. Instances of its capture in various parts of the county have of course been very numerous.

Hooper (*Cygnus ferus*).—Few winters pass without specimens of this fine bird being obtained on the Severn and its tributaries.

Bewick's Swan (*C. Bewickii*).—By no means rare in the neighbourhood of Shrewsbury in hard winters. I possess a good bird, killed

on the Severn two or three winters ago. I believe this species to be quite as common as the hooper.

Mute Swan (*C. olor*).—Far too common and too thoroughly domesticated to require any remark.

Shieldrake (*Tadorna vulpanser*).—A good specimen was obtained a few years ago in the farm-yard at Corfton Manor, where it had alighted amongst some tame ducks. It is in the possession of Mr. Thomas Lloyd Roberts. Another was in the collection of the late Mr. Pinches, killed at Lutwyche Hall. Several other instances have occurred in the county; still it is by no means common.

Shoreller (*Anas clypeata*).—Usually obtained in hard winters, but never very plentiful.

Gadwall (*A. strepera*).—A rare and very handsome duck, occasionally met with on the Severn.

Pintail (*A. acuta*).—A good many are annually taken in the various decoys in the county.

Wild Duck (*A. boschas*).—Sparingly distributed over the various streams and brooks. The greatest bulk of them are to be found in the decoys or upon those lakes and ponds where they are fed and protected.

Garganey (*A. querquedula*).—A very beautiful little duck, but seldom met with.

Teal (*A. crecca*).—I have seldom met with this bird during the last few winters. They appear to keep to the decoys and quiet ponds more than they did formerly, which will be probably accounted for by the great increase of gunners.

Widgeon (*A. Penelope*).—Never so numerous as the wild duck or teal in this county, though a certain number are obtained almost every winter.

Velvet Scoter (*Oidemia fusca*).—Very rarely met with so far from the sea coast, though I believe a few instances have occurred.

Common Scoter (*O. nigra*).—More frequently obtained than the preceding bird. I have seen a good specimen killed a few years ago at Burrington Pool.

Pochard (*Fuligula fetina*).—By no means rare. I have killed several of these birds on my pool at various times, but usually solitary specimens.

Scaup Duck (*F. marila*).—A rare duck in this county, though several specimens have been met with. It was killed by the late Mr.

Pinches, at Soudley Pond, and has also occurred to several other collectors.

Tufted Duck (*F. cristata*).—One of the commonest of our winter stragglers, though I have seldom seen more than one solitary individual at a time. I have repeatedly killed this duck in all stages of plumage, with the exception of the fully adult. In that handsome dress they are certainly rare.

Goldeneye (*F. clangula*).—About equal in rarity with the other oceanic ducks, though few winters pass without specimens of this handsome bird being met with on our rivers.

Smew (*Mergus albellus*).—The River Severn, near Shrewsbury, is a very favourite winter resort of this particularly elegant bird. I have a splendid pair in my collection, obtained from thence in the winter of 1865. They are full adult male and female. I also possess a very perfect specimen of an adult male, killed by me, some years ago, on my pool.

Redbreasted Merganser (*M. serrator*).—Seldom obtained, excepting in hard winters, and then not very uncommon. I have seen several good examples obtained in this locality.

Goosander (*M. merganser*).—Like the smew, this fine bird seems to frequent the River Severn, near Shrewsbury, in hard winters. It is by no means rare. I saw two magnificent old males last winter, which had been killed at Longner by Mr. Burton.

Great Crested Grebe (*Podiceps cristatus*).—Breeds at Hawkstone, and on several of the meres and ponds on the Staffordshire side of the county; consequently it is by no means a rare bird.

Rednecked Grebe (*P. rubricollis*).—Exceedingly rare. I have never met with a recent specimen myself, but am informed that it has occasionally been obtained, generally in winter plumage.

Slavonian Grebe (*P. cornutus*).—More frequently met with in that immature stage of plumage described by Bewick as the “dusky grebe” than in any other form. Specimens are not rare in winter on the Severn.

Eared Grebe (*P. auritus*).—I had the great satisfaction of examining two exceedingly fine specimens of the adult male bird in the flesh, killed at Hanmer Pool, near Whitchurch, in the summer of 1864. They were seen in the company of other birds of the same kind (probably females), and, no doubt, had these grebes remained unmolested, they would have bred there. They were in perfect plumage, and are in the possession of Mr. George Clay, of Wem.

Little Grebe (*P. minor*).—Common on almost all our rivers, brooks and ponds, where I fancy they remain the whole year. But for their great powers of diving, and cunning in concealing themselves, they would soon be exterminated in this part of the county, as I fear they have a very bad name amongst our anglers.

Great Northern Diver (*Colymbus glacialis*).—A very fine specimen of the adult female in Lord Hill's collection, killed at Ellesmere. I have also seen several other specimens obtained in immature plumage.

Blackthroated Diver (*C. arcticus*).—An exceedingly fine adult female of this bird is in Lord Hill's museum, killed at Gredington in 1862; I believe the only one met with in full adult plumage. In the immature dress they are much more frequent.

Redthroated Diver (*C. septentrionalis*).—A few have been obtained in winter, but they are rare in the full summer plumage with the red throat. Immature examples are not very uncommon.

Common Guillemot (*Uria troile*); *Black Guillemot* (*U. grylle*).—Very rare indeed so far inland, though an occasional specimen of each bird has been obtained in the county.

Little Auk (*Mergulus melanoleucos*).—This singular little wanderer has been frequently obtained. One was picked up in an exhausted state near Shiffnal; another was caught under the Welsh Bridge, in Shrewsbury, now in Lord Hill's collection; and I have a specimen taken at the pool at Acton Scott, and there are many other instances on record of its capture.

Puffin (*Fratercula arctica*).—I only know of one bird, taken on Cornden Hill.

Razorbill (*Alca torda*).—Occasional, but very rare.

Common Cormorant (*Phalacrocorax carbo*).—These birds are not unfrequently blown inland after heavy gales, and have been met with in almost every part of the county. I have seen and obtained them on my estate.

Shag or Green Cormorant (*P. graculus*).—I had an immature specimen of this bird brought to me in the autumn of 1860. It was captured at Longville, where it had joined some ducks on a small pond in a garden; however, it did not survive many days, probably having been thoroughly exhausted before its arrival.

Gannet (*Sula alba*).—Several instances of its occurrence are on record. A fine specimen of the adult bird was killed at Market Drayton in January last, and I have a very good immature bird, obtained a few winters ago near Shrewsbury.

Roseate Tern (*Sterna Dougallii*).—Mr. Eyton has a bird in his collection killed at Longden Mill, the only one I believe ever met with in the county.

Common Tern (*S. Hirundo*); *Arctic Tern* (*S. arctica*); *Lesser Tern* (*S. minuta*); *Black Tern* (*S. fissipes*).—Specimens of all these birds have been obtained in the county, of which I believe the black terns rather preponderate. They may all be considered as very rare and uncertain visitants.

Little Gull (*Larus minutus*).—One specimen, in winter plumage, killed at Coalbrookdale, in the collection of Mrs. Alfred Darby, of Stanley Hall.

Blackheaded Gull (*L. ridibundus*).—Occasionally brought in by stress of weather. The last specimen I have seen was a bird in immature dress, killed at Stoke Castle near Craven Arms Station.

Kittiwake Gull (*L. tridactylus*).—Stragglers are often met with after heavy gales; they are generally picked up in a thoroughly exhausted state, and seldom survive, though I have used every means in my power to bring them round.

Common Gull (*L. canus*).—Not so common as the preceding bird, but occasionally met with.

Lesser Blackbacked Gull (*L. fuscus*); *Herring Gull* (*L. argentatus*); *Great Blackbacked Gull* (*L. marinus*).—Specimens of all these sorts have been obtained, more frequently in the immature than in the adult plumage, and all probably from the same cause,—the severe storms on the Welsh Coast.

Glaucous Gull (*L. glaucus*).—One of these fine gulls was obtained at Pradoc, in the act of devouring a dead sheep. Another specimen was killed at Condover Hall.

Pomarine Skua (*Lestris pomarinus*).—A very fine specimen of an adult bird, killed at Marten Pool, near Baschurch, is in Lord Hill's collection. The plumage is uniformly dark (almost black), and the two middle tail feathers considerably elongated. I believe another example was picked up dead in Shrewsbury, from having flown against the spire of St. Alkmund's Church.

Richardson's Skua (*L. Richardsonii*).—I have obtained several specimens in immature plumage, but in the adult stage they are rare.

Manx Shearwater (*Puffinus anglorum*).—This neat and interesting little bird has been met with on the Severn, near Shrewsbury; also picked up in an exhausted state at Weston, the seat of the Earl of Bradford.

Forktailed Petrel (*Thalassidroma Leachii*).—The fearful gales of last November were productive of several examples of this rare petrel. I saw one bird which was killed at Pradoc. Another was killed at Weston, near Shiffnal, by Lord Bradford. Some years ago Mr. Eyton obtained one of these birds at Montford Bridge; and Mr. Henry Shaw has killed one specimen.

Storm Petrel (*T. pelagica*).—Occasionally met with, driven from its proper resting-place, the ocean's stormy billows.

With this bird I shall conclude these few remarks. I trust they may have proved interesting; at any rate I can vouch for their being authentic.

JOHN ROCKE.

Clungunford House, Shropshire,
March 6, 1866.

Ornithological Notes from West Sussex.

By W. JEFFERY, jun., Esq.

(Continued from Zool. S. S. 142.)

JANUARY, 1866.

Willow Warbler.—On the 12th I saw a willow warbler flitting about in some alder bushes by the side of a stream. I have previously shot this species in the month of December.

Common Snipe.—Having winged a snipe on the 12th, I could not help noticing a peculiar manner which this bird had of spreading its tail and turning it up at right angles to its original position. It did this several times as it attempted to rise from the ground. Has any reader of the 'Zoologist' ever noticed this peculiarity? It has struck me that it might have been done to aid the bird in rising, as the wing was only slightly tipped.

Brambling and Siskin.—Large flocks of bramblings appeared in certain localities (Sidlesham, &c.), principally about the middle of the month. I cannot find that they remained for any length of time, but several were shot. Siskins have appeared in limited numbers at times throughout the month, and altogether I have seen rather more of these birds than usual this winter.

Longeared Owl.—Towards the end of January six longeared owls were driven from a yew tree at Kingly Vale, on our downs, by a party of rabbit-shooters: three out of the six were shot. I have before

remarked (Zool. S. S. 88) having found ten of these birds in a yew tree at the same place: this was in March.

The Colymbi.—The redthroated diver has been scarce here during the past winter; but the great northern diver has, on the contrary, been more frequently met with than usual on the coast and in our harbours. It would seem, by comparing the notes which have appeared in the 'Zoologist' that these two species have, to a certain extent, "exchanged beats" this winter, *Colymbus glacialis* taking the place of *C. septentrionalis* in the south, and *vice versa* in the north. Since the commencement of the present year several great northern divers have been brought into Chichester, where they are eagerly sought after and bought for the skins, to be cut up as before stated (Zool. S. S. 141) to make plumes for decorating ladies' hats. I have not had an opportunity of examining any of these specimens in the flesh, but from the "remains" I am certain that at least two of them had the upper plumage very much marked with white spots.

Eared Grebe.—A specimen of this rare grebe was shot in Chichester Harbour in the last week of January. Unfortunately I could only obtain the head; the birdstuffer to whom it was sent having received orders to cut up the skin for plumes, which was done before I saw it. This "plume mania" frequently deprives us collectors of a rare bird. I believe this same man had a ringed guillemot to cut up, but not having a chance to see the head of this bird I cannot speak positively about it. The shape of the bill in the eared grebe at once distinguishes it from the Sclavonian grebe, which species it appears mostly to resemble. Some few of the bright feathers which form the tuft on each side of the head are visible in the present specimen. Grebes, on the whole, have been scarce about here this winter; even the dabchick is much more rare than it was a few years ago.

FEBRUARY, 1866.

Common Buzzard.—I obtained a specimen of the common buzzard, in the flesh, on the 3rd; it had been killed at Stanstead, a few days before. This is a very rare bird in Sussex, and I was glad to get it for my collection. It proved, on dissection, to be a female, and although in excellent condition the stomach was quite empty. The general colour of the plumage is rusty brown, with a coppery tinge, the under parts slightly intermixed with white. As Yarrell does not

give much information about the measurements I offer the following, which I took from the present example, previously to skinning:—

| | |
|--|-------------------|
| Extent of wings when expanded | 4 feet 1 inch. |
| Length (base of bill to tip of tail) | 1 foot 8½ inches. |
| Carpus to tip of wing | 1 „ 3½ „ |
| Length of tarsus | 3 „ |

I would here ask the question, Would it not be advisable that it should be generally understood with the readers of the 'Zoologist' that in measuring the length of any bird *the bill be not included?*—*i.e.*, measure from base of bill to tip of tail. I am under the impression that such an understanding would in many cases save trouble and confusion, and it appears to me that the bill ought *not* to be included, as in some species—several of the waders especially—it varies in length considerably in different specimens.

Quail.—The quail is not by any means a common bird in this part of Sussex at any time of the year, but appears occasionally to winter with us. In the early part of February I was shown one that had been recently killed in this neighbourhood, and in the month of November, 1863, one was shot at Selsey, where, I was told, a nest and eggs were found the previous summer, but of this I cannot speak with certainty.

Puffin.—A puffin was shot about the 7th in an arm of Chichester Harbour, which runs up to Fishbourne; it was an immature example, the bill not having attained its full depth. It is rarely that this species is met with in our harbours, they having no breeding station nearer than the Isle of Wight.

Wood Pigeon and Stock Dove.—Flocks of wood pigeons have frequented our oak woods throughout the winter, and with them some stock doves, which are here called "blue rocks;" they appear to feed on acorns and perhaps beech-mast. In the winter of 1858-9 wood-pigeons were very numerous, more so just about here than they have ever been since.

W. JEFFERY, JUN.

Ratham, Chichester,
March 5, 1866.

Ornithological Notes from the Isle of Wight.

By Captain HENRY HADFIELD.

(Continued from Zool. 9846).

OCTOBER, 1865.

Swan.—Since remarking on the plumage of the cygnet (Zool. 9723) the bird has lost the whole of the grayish brown tinge then observable on the lower part of the back, the plumage having for some weeks been of a pure unspotted white all over, proving Yarrell right, and Temminck wrong, with regard to the length of time that this species is in acquiring the perfectly white or adult plumage; but the latter was right, I believe, in thinking that the swan is not *perfectly* matured till the third year, for the bill of this cygnet is still of a dusky horn-colour, with a slight pinkish or reddish tinge, and there is now seemingly little prospect of its assuming the bright orange colour this (its second) year. Temminck merely remarks that the bill at the second year becomes yellowish.

Blackbird.—October 9th. In my July notes the capture of a young pied bird of this species was recorded, and I then expressed my doubts as to the permanent retention of the white plumage, giving my reasons for it; and subsequent observations has partly verified my conjectures, and confirmed me in the opinion that the white of these pied varieties is not a *fast* colour. Though the tail-feathers were all white, except at the tips, they are now wholly black, but a few of the exterior coverts are still white, and there is a spot or two of the same on the lower part of the back, and a slight grayish tinge on the upper, also on the wing-coverts, but so faint as to be barely distinguishable, whereas before the moult there was a considerable admixture of white; in fact, the bird is so transformed that even at a short distance it might be taken for one of ordinary colour. The bill, which was of a dusky colour, slightly tinged with yellow, is now almost wholly of the latter colour. In its now perfect adult plumage it appears at least a third larger, and is a remarkably fine and handsome bird. My anticipations being so far fulfilled, I would now venture to predict that at the next moult all traces of these white and grayish tints will have disappeared. The house sparrow is another species subject to these variations of colour: one partially white was observed on the 11th of October. I once shot a sparrow almost white, which proved to be a young bird. Since writing this note, I have chanced to observe in Buffon the following

remark on white swallows, confirmatory of my views, "Il pourroit se faire que cette blancheur ne fût que passagère, et qu'elle ne reparût point, après la mue ; car quoiqu'on voie assez souvent dans les couvées de l'année des individus blancs, il est rare qu'on en voie l'année suivante parmi celles qui reviennent."

Partridge.—During one of the late severe gales a covey of partridges took refuge in the small back-yard of a house in the town, surrounded by high walls, where they lay concealed among the leaves of some vegetable-marrow plants till accidentally disturbed.

Blackheaded Gull.—October 14th. Seen about Bembridge Harbour with the herring gull.

Kittiwake.—Both old and young birds of this species seen at the same time and place, feeding on the mud-banks at low water.

Teal.—A small flock, numbering six or seven, was observed about the beginning of the month in the neighbourhood of Bembridge.

Curlew.—A few have appeared about the marshes of late, and I saw one exposed for sale on the 18th.

Girl Bunting.—October 23rd. Three birds of this species seen this morning in the garden, an immature male and two females I believe.

It is somewhat slighter than the yellowhammer, and a neater and more lively bird. The tail appears remarkably long ; the head rounded, and the feathers on the crown somewhat raised, whereas in Macgillivray's figure it is flattened and elongated ; and the crescentic mark on the fore neck is reversed. He probably was unacquainted with the species, as the description of the female is borrowed from Montagu. Though not a very numerous species, it is by no means uncommon.

Redbacked Shrike.—In my February notes of 1865 the appearance of this shrike—which is a rare bird with us—was recorded ; but I omitted to state that I knew of one instance of its building here, a nest having been brought me containing four eggs.

Sparrowhawk.—I have lately heard of one being stunned and captured by coming in contact with a glazed window, when in pursuit of a sparrow flying in at the opening beneath.

Gray Wagtail.—October 31st. This elegant species is now occasionally met with, and two were observed to-day about the Bonchurch pond and brook, their usual haunt. One was running to and fro over the water-lilies, and taking insects from off the floating leaves with which the stream is dotted, and here and there bridged over,—so quick and light the step that the smaller leaves only are perceptibly depressed. In springing from leaf to leaf the wings are seldom raised,

though a slight vibratory motion is observed. This is, perhaps, the most beautiful and graceful of British birds.

NOVEMBER, 1865.

Swallow and Martin.—November 1st. Though many of both species were to-day observed hawking about the inland cliffs at St. Lawrence, there were few old or forktailed birds among them. Judging from the narrow circles described, their insect food must still be plentiful. I had before seen swallows and martins about these shelving cliffs late in the season, and believe they roost in the crevices and on the ledges. On the 11th some of both species observed at 3 P. M. flying about the Bonchurch cliffs, where I had also noticed a few on the 7th. On the 15th one martin was seen; and on the 16th I saw three swallows about the church spire; thermometer 50° at 9 A. M. 23rd. Three martins observed to-day hawking; weather very wet and mild; thermometer 53° at 9 A. M. 27th. Two martins seen about the sea-cliffs at Shanklin, and I observed a swallow pass over the village at 4 P. M.

Magpie.—Is now to be met with in flocks; I saw a small one on the 1st flying in loose order, as is their habit.

House Sparrow.—November 1st. Observed one carrying straw into an ivy-clad tree, but this habit I have more than once had occasion to notice and record. A sparrow found dead on the lawn having been opened, several small angular pieces of brick were found in the gizzard, so that they could not have been long swallowed.

Lesser Blackbacked Gull.—The plumage of a pair of these gulls, taken from the nest in the Freshwater cliffs during the spring of last year, is in the transition state described by Temminck, and the tail for the greater part of a brownish-black colour. But there is reason to believe that the moulting of birds in captivity varies greatly; for instance, a caged bullfinch, whose moult last year was completed by the middle of October, had, at the same period this year, hardly commenced. But may not the unusual mildness of the season partly account for it, and the feathers of birds—as the leaves of trees—fall sooner or later according to the prevailing temperature? The two gulls differ as to size and colour, one being smaller and much lighter than the other. Though tame, they are voracious birds, capturing any unlucky house sparrow that comes within their reach while feeding: this I hear from the owner and his gardener, and I am likewise informed that they have killed a young bantam, which they were endeavouring to swallow. These birds manage to provide for themselves, and

destroy an incalculable quantity of worms and grubs. The woodlouse, too, is eagerly sought for, and greedily devoured.

Bluethroated Warbler.—November 12th. In passing through Bonchurch, at 1 p.m., I again observed this now familiar bird, perched on a hawthorn hedge, within a stone's throw of its old haunt by the brook-side. Since the autumnal moult it has assumed its perfect adult plumage, the breast being now of a pure and spotless blue.

Woodcock.—A couple of woodcocks shot on the Downs on the 10th are the first I have heard of. Easterly winds had prevailed, but the thermometer had ranged from 45° to 50°.

Dartford Warbler.—November 15th. One observed on the Downs.

Snipe.—First noticed early in the month, one having been flushed in a turnip-field.

Rock Dove.—Though I had heard of their being seen about our cliffs, it was not recorded for fear of mistake; but I can no longer doubt it, one of my informants having observed them accompanying the daws, and another saw a small flock fly out of the same cliffs, and from his description they could be no other than the rock dove.

DECEMBER, 1865.

Martin.—Martins remained with us till December, some having been observed near Bonchurch on the 10th, on which day the thermometer marked 44° at 9 a.m., and had been as high as 49° on the previous day at the same hour.

Wild Duck.—December 14th. Heard to-day of numerous ducks being seen on the eastern coast.

Blackheaded Gull.—This species now frequents the newly-ploughed lands along the coast: a considerable flock seen on the 16th between Shanklin and Lake, one of their favourite haunts.

Shag.—Though the shag is not so commonly met with now, I hear from the Ryde watermen that one has occasionally been seen of late taking up a position on an isolated pile in the direction of Sea View.

Cormorant.—This common species frequents the Solent and Southampton Water. On the 16th (a foggy day), one allowed the steamboat to get within fifty yards of it before rising heavily from the water, which it did by a rapid beating of the wings, aided by the propelling power of its strong and muscular legs, leaving a long line of broken water in its wake.

Redthroated Diver.—December 19th. Three or four divers were shot off Shanklin yesterday, and five to-day, but three only were secured, the rest having escaped by diving. The one I saw had no appearance of red about the throat, which was white, as well as the neck and whole under parts; and I am informed by the man who shot them that all had white throats; he knows the species well, having long been in the habit of shooting them, but never saw one with a red throat. 26th. A hazy and rather windy day. Some hundreds of divers were found at 8 A.M., about a mile from the coast; but though frequently flying past the boat, they seldom ventured within shot, and but two were secured: one, a remarkably fine bird (proved to be a male), has the throat and neck white, but the former has some minute gray spots, and there is a slight tinge of the same extending to the neck, but this is only discernible on a close inspection; the other, a somewhat smaller bird, has considerably more of the gray on the throat and neck. A third specimen examined has some of the feathers of the throat and neck slightly edged and tipped with grayish brown, apparently in a transition state. My attention having been called to the subject, I have endeavoured, by inspection and inquiry, to assist in clearing up the point; and after what has been stated, too, by more than one correspondent, there is reason to believe that the redthroated birds referred to by Montagu and other writers were procured ere the autumnal moult was completed. Moreover, late observations lead me to think that the moulting of birds may in some degree be influenced by the prevailing temperature of the season, and it is much to be desired that the attention of ornithologists should be directed to this subject.

Puffin.—Though Macgillivray says, "Puffins are not found on our coasts in winter," I have frequently heard of their being seen, and an old fowler—who knows the bird well—tells me that he fell in with some off Shanklin on the 18th or 19th.

Kestrel.—December 19th. Though one was seen to-day they are seldom met with now. In a long walk over the downs not one was observed, where, late in the autumn, I heard of six being seen together; but whether they merely change their hunting-ground or cross the Channel I have yet to learn; but that they, for the most part, quit our downs and cliffs at the approach of winter there can be no doubt.

Rook.—December 24th. Observed to-day a number of rooks flying about their nesting-trees at Bonchurch, having been attracted by their clamorous cawing. Had also heard and noticed a few on a previous

day, and was informed by one of the villagers that they had been seen carrying away the sticks from one nest to another, and that there had been much fighting on the occasion.

Kittiwake.—December 26th. A very handsome bird of this species was shot. Forehead white; crown, nape, scapulars and upper coverts bluish gray. Throat, neck, whole of under parts and tail of the purest white. Part of the five exterior primaries black, but all, excepting the first, tipped with white, that colour gradually increasing, so that at the fifth there is a considerable patch. Before the eye, and both above and beneath, there are some fine black hair-like feathers, resembling eye-lashes, which, being on a white ground, have a peculiarly beautiful effect. Bill of a bright greenish yellow; feet and legs black. No appearance of red about the eye. Though no ducks were seen I was informed by the boatmen that on a previous morning an immense flight was observed between Shanklin and Dunnose.

Woodpecker.—A neighbour, many years resident in Shanklin, informs me that he had in his collection two woodpeckers (the great spotted he believes), both procured in the flesh, having been shot in a wood near Brading. And I may observe, in passing, that some parts of the island are well wooded; for instance, the country between the above town and Wooton, and to the north-west of Newport there is the Forest of Parkhurst, and further westward there are woods and some fine old timber.

[Captain Hadfield would oblige me greatly by acquiring more definite information: when a fact so interesting as the occurrence of a woodpecker in the Isle of Wight is noticed, the name of the person who killed it or them, the date when killed, the locality where killed, the name of the species, and the name and address of the present owner of the specimen, should be given with scrupulous accuracy.—*Edward Newman*].

JANUARY, 1866.

Velvet Scoter.—January 1st.—Heard of five black and white “divers” being seen in our Bay, endeavouring to ride out the south-easterly gale; that they were birds of this species I can have no doubt. They were often in the midst of the breakers, but rising occasionally on wing to avoid the heavier waves; few water-fowl could, I think, have lived in such a sea, and the increasing storm has driven every other water bird from the coast, for in a stroll of some miles along the cliff and

shore on the 3rd, none were seen as far as the eye could reach, nor did I meet with a *Tringa* of any kind, but found numerous small birds collected in a sheltered nook on the shore, but none worthy of note, except the white wagtail and meadow pipit. Innumerable small black flies were swarming about, and collected on the decaying sea-weed: I thought the birds might be in pursuit of them.

Redthroated Diver.—January 6th. Though some hours were spent in diver shooting and hunting, but one was secured; it was a male, and has more of the grayish tinge on the throat than those previously procured or examined, and many of the feathers are slightly tipped and edged with light reddish brown. Though the diver is rather an awkward looking bird, owing to its comparatively small wings, long and downward-curved neck, and slightly depressed tail, its flight is most rapid; and I have found them hard to kill, the plumage being so close and stiff, and on the breast—which shines like silver or burnished steel—almost invulnerable. Unlike the cormorant, shag, guillemot and other species, they do not move in file, but fly apart or in loose flocks, at some forty or fifty feet from the water. When disturbed they often, after a short circular flight, return to their feeding-ground in the shoal water on the ledges. When alarmed or shot at, they quack like a duck, but their more usual cry is sonorous and plaintive. Comparatively few were observed to-day, but the late tempestuous weather may be the cause. But two gannets were observed, whereas last winter they were very numerous. One black scoter, a few guillemots, cormorants, blackbacked gulls and kittiwakes were seen, and two of the latter were shot; they proved to be male and female, in perfect adult plumage. The mouths of both are red, but there is no appearance of red around the eye, which is hazel, and pupil black. The gizzard is elongated and very muscular; that of the male contained the half-digested bones of some small fish, but that of the female was quite empty, though killed about mid-day; but both were covered with fat of a bright yellow colour. I have now seen and examined a considerable number of divers without finding one with a red throat, and they all have the back spotted with white, though one of them is but faintly marked. According to Temminck and other authors the back of the adult is blackish brown,—if so, none of the birds that have come under my observation had arrived at maturity, the one above referred to being dusky on the posterior part of the back only. The largest and finest of the whole has the most, as well as purest, white markings, as described after the second autumnal moult. The dusky-backed specimen

is apparently a young bird, for though muscular, the flesh was remarkably tender and the skin easy of removal. In no bird, except perhaps the great northern diver, have I found the tibia so long, strong and muscular; the ligaments braced and bound down by transverse bands, beneath which the femoral artery is imbedded in a groove or hollow channel in the bone, after passing through an elongated opening in the upper exterior surface, but returning again to the front by a narrow aperture in the bone before reaching the knee. The thigh-bone, though very thick, is but $1\frac{1}{2}$ inch in length, whereas the tibia is remarkably long, namely $6\frac{3}{8}$ inches. The loon, when feeding, invariably rises out of shot, but they are some seconds getting clear of the water, which is marked by a white line of foam.

Rock Dove.—January 11th. Observed a pigeon of this species to-day in rapid flight to the eastward, in the direction of Dunnose, against a strong head-wind; it was flying low, so that the white patch on the rump could be distinctly seen; and from its small size could be no other than the rock dove.

Hedgessparrow.—A nest containing one egg was found at Shanklin early in the month.

Bluethroated Warbler.—January 12th. I have now the satisfaction of recording the appearance of another of these rare warblers. Since the first was observed I have been constantly on the look out, and as late as the 12th of October referred to its change of plumage at the autumnal moult. The warbler seen to-day is a young and immature bird, considerably smaller than the former, and with scarcely a shade of blue about the plumage. The chin and neck white, that colour extending to the cheeks and ear-coverts. The breast has a mottled appearance, being of a dull brown and white, with a slight bluish tinge, and there is a dusky crescent-shaped band beneath. The upper plumage is of a grayish brown. It attracted my notice by flying across the public road at Bonchurch, and then settling down to feed among the decaying leaves by the brook-side, where I believe I had a momentary view of it a few weeks since, but could not be quite sure. The blue-breasted bird was seen to-day near the same spot by two workmen. I am now inclined to believe that these birds were bred in the Undercliff; if so, there are probably more of them in the neighbourhood, though the old birds may have re-migrated. When expressing a hope that a partner might be found, I little anticipated that my wishes would have been so soon realised, though it has yet to be ascertained that the new comer is a female, but there is reason to

believe it on account of the smallness of the size and the dullness of the plumage.

Wild Duck.—January 26th. A very large flock observed this morning in Sandown Bay ; they were, as usual, unapproachable.

FEBRUARY, 1866.

Missel Thrush.—Observed to be paired early in the month.

Rook, Magpie, &c.—February 11th. A fearful south-westerly storm has to-day brought many of our finest old elms to the ground. One of gigantic growth (referred to at Zool. 9509) is 6 feet 7 inches in diameter at eight feet from the ground, just below the fork, though five feet lower down it measures but 4 feet 2 inches. Its height is calculated to be about a hundred feet. This was the monarch of the Bonchurch grove, and probably the largest elm in the Island. Another tree, next in size, has shared the same fate, both having fallen into the little lake, but fortunately the swans escaped. I may remark here that the cygnet, which is now a full-grown two-year old bird, in perfect adult plumage, has the bill of a dusky greenish yellow at the base, and of a bright pinkish colour on the ridge, the latter hue gradually extending to the sides, but there is not a shade of orange as yet. Another large elm, near the old church, having rooks' nests in it, but no eggs that I know of, has been blown down too. Few birds were able to face the tempest, and I observed a magpie carried away by it, its long tail doubled under the body and protruding beyond the beak.

Chaffinch.—February 13th. A large flock of these birds was observed, and I remarked that the males and females were in about equal numbers.

Woodpigeon.—Has been more than usually abundant, and I am informed by a neighbour, whose grounds are well-wooded, that they frequently alight in his garden to feed on the cabbages, which I find have the top leaves eaten off, as if by rabbits, but a wire netting protects them from the ravages of the latter.

Redthroated Loon.—Though this species is still on our coast, comparatively few are to be met with now, and they have been found unapproachable, not one having been shot lately.

Great Northern Diver.—A large blackheaded diver—which could be no other than a bird of this species—was met with off Shanklin towards the middle of the month, but there was no getting

near it, for when pursued it invariably dived, always rising out of shot.

HENRY HADFIELD.

Ventnor, Isle of Wight,
March 1, 1866.

A Visit to Walney, the Lakes, and the Farne Islands.

By HOWARD SAUNDERS Esq., F.Z.S., &c.

UP to last year my acquaintance with our sea-birds during the breeding-season had been confined to those which then frequent the rocky and precipitous portions of our coasts; so, animated by the success of my friend Mr. J. E. Harting, whose experiences are detailed in the 'Zoologist' for 1864 (Zool. 9156, *et seq.*), I resolved to proceed to Walney Island, there to acquire some knowledge of the habits of the birds which breed round the flat and shingly shores of our coasts, the special object of my search being the roseate tern (*Sterna Dougalii*). Although my friend had failed in obtaining this bird or its eggs, still he had seen it, and I hoped that, with the benefit of his experience and by going forth, as an ornithological "Sir Galahad," on a "special quest," I might succeed in finding it somewhere along the Lancashire coast.

Nowhere numerous, compared with the arctic and common terns, the roseate tern seems to become more abundant as we go west, and is found to breed at the Bermudas, although, as the Rev. H. B. Tristram has lately informed me, it is by no means plentiful even there. Its former breeding-places in our islands are pretty well known to ornithologists, but it appears that without, so far as I am aware, any assignable reason, this elegant species is gradually dying out. There has been no special persecution to account for this, no gamekeeper shows its form in his barn-door "collection;" it is rarely to be found amongst the stuffed birds at the house of the light-house keeper, coast-guard or cottager, along our coasts. A brother collector will show you almost any other tern but this: ask half a dozen London dealers for a skin, and they won't be able to find one: it is not killed down for "plumes," and as for the injury inflicted by the "sportsmen" who go out to shoot sea-birds indiscriminately, this species runs no more risk than its congeners. There is no disputing the fact that the species has in the last few years greatly diminished; all I will further say is, that I want two "clutches" of eggs, and a pair (or two, at most) of

birds, and if any reader will furnish me, personally or by letter, with information which may enable me to obtain them, I pledge my word that no ungentlemanly advantage shall be taken nor slaughter perpetrated. Now, without further preamble, I will get on with my notes.

I had fancied Barrow, or Barrow-in-Furness, as it is properly called, to be a small country village, a mere means to an end, *viz.* that of getting to Walney. To my disgust I found that there were furnaces in Barrow (excuse the pun), docks were being made, and "navvies" were there in swarms, the town itself a dreary wilderness of red brick houses "whose sameness was shocking to see." Early in the morning of one of the very first days of June I crossed the narrow creek which separates Barrow from the village of North Scale, on Walney Island, and, profiting by the experiences of my predecessor, I soon got hold of the right man to act as guide, whom I shall call "Jack." Together we sought the abode of the stern proprietor of the land where the blackheaded gulls breed, and after some debate he granted permission to visit his "gullery" and take a *very* few eggs, also to carry a gun over his land, on the express condition that I was not to disturb the gulls, nor meddle with the rabbits, which swarmed on the "warren" where the gulls were. I readily gave the required promise, and we set out, meeting on our way Harry, the son of the proprietor, who had been down at the warren, keeping an eye upon the movements of certain foraging navvies.

Wheatears were abundant, and numbers of peewits hovered over us, uttering their plaintive cry, as we crossed the flat on our way to the principal colony of the gulls, which lies on the western side of the island. Long before we reached the nests the air was alive with some three or four hundred pairs of birds hovering over our heads and raising a deafening clamour. The nests had been already robbed, and consequently the eggs we found were mostly of the smaller sized pale varieties, but this I did not regret, as I already possessed a good series of the ordinary types from Scoulton Mere, in Norfolk. Numbers of young were already hatched, and as upon the smallest alarm they run from the nest, and attempt to conceal themselves in the tussocks of coarse grass, great care was required to avoid stepping upon them.

After enjoying for some time the animated scene, and selecting just half a dozen eggs, I enquired for the breeding-place of the Sandwich terns, or as they are here called "sea swallows," but Harry stated that

they had been robbed by the "navvies," and in consequence had all deserted. From certain nods and winks which passed between him and my guide I suspected his statement, and afterwards found that it was a downright lie, for the same day he conducted a gentleman, now one of my best ornithological friends, to the place where they bred, and from him I learned that there were but seven nests, some with young birds, and no well-marked eggs in any of them. As I afterwards saw numbers of this species at the Farne Islands, I lost little by not visiting this very small colony, except that I should have liked to verify personally the statement of my predecessors that these birds on Walney Island make a regular nest, whereas at the Farne Island they lay their eggs on the bare ground: I fancy they use the old nests of the black-headed gulls.

Skirting the warren, and ranging along the top row of shingle, where the sea-tang and drift were spread in layers, my guide soon pointed to a "sparling's" nest, and I raised two eggs belonging to either the arctic or common tern, numbers of which were soaring over our heads, some at a great height, and the rest so mixed up with the whirling crowd of gulls that it was utterly impossible to distinguish their species. The air was one seething mass of birds, and their united clamour precluded the possibility of distinguishing any species by its peculiar call, for although we had left their breeding-ground the gulls still hovered over our heads in myriads.

Terns' eggs being of no value to me, unless I could distinguish the species, I left these and at least forty or fifty more "clutches" of eggs which I found the same morning. Many were outside the sandy hillocks, covered with coarse grass, which skirt the shore, but still more were in the hollows and "bays" between the sand hills, and among the tussocks of grass. In the majority of cases there were a few "bents" round the eggs, although the eggs themselves were often resting upon the bare sand or shingle; sometimes there were some seven or eight bents, almost worthy of being called a nest. In the numerous sandy bays near the north end of the island "nests" were very abundant, and were often mere depressions in the sand or shingle, but although I could distinguish with my glass both arctic and common terns, I was unsuccessful in watching them off their eggs, and I do not recollect putting a single tern off the ground the whole of that day.

Oystercatchers, or "sea-pies" were very abundant, and we also found some of their nests along the top ridge of shingle, although most

were in the aforesaid bays. I found two or three nests with four eggs, and took one clutch, three of them wonderfully warm-coloured eggs, richly blotched, like some of the Norfolk plover; the fourth was scrawled all over, and utterly unlike the rest. Some of the nests were very prettily ornamented with bits of shell; others mere depressions in the sand. I confess to having great doubts as to all four eggs being the produce of the same bird: I have also twice found four eggs in a clutch of terns, arctic or common.

Prowling along the shingle, just above high-water mark, a new sharp note caused me to raise my eyes from the ground, and I saw a lesser tern coming straight at me, as if he meant mischief, then, seeming to think better of it, he veered off, and I saw him no more. The next instant Jack exclaimed "Eh, I never saw sparlings' eggs like these afore," and stooping down I lifted from the bare shingle, without an apology for a nest, the prettiest pair of eggs I ever set eyes on. The ground colour was then of a lively bluish green, but alas, they soon faded, and are now in nowise distinguishable by their beauty from many others in my cabinet. I never found another nest, nor saw the birds again, on this island; we were equally unsuccessful on the North-umbrian coast, where this species is now extremely rare.

It was a glorious sight upon a glorious day: to the north Black Combe towered to the clouds; to the left the Isle of Man loomed dimly through the summer haze: we had left behind the "hacketting" of the gulls, and the shrill whistle and titter of the sea-pie, the harsh "cree" of the hovering terns, with now and again the plaintive note of the ring dotterell mingled with the pleasant ripple of the sea. Far away upon the sand banks we watched the shellducks leading their broods, but of the roseate tern, the special object of my search, there was as yet no trace; in fact, the higher the sun rose the more the terns seemed to follow his course, rendering it utterly impossible to distinguish their species.

A couple of ring dotterells' nests of four eggs each ("grunling" is the provincial name) had rewarded our search, but as they were evidently hard-set we did not take them, and returned along the shore, cautiously keeping outside the breeding-places of the gulls. Suddenly a harsh "crake" caught my ear, and there above our heads, easily distinguishable by their more slender form, bathed in an indescribable pink glow, hovered a pair of veritable roseate terns. I gazed at these objects of my search until my eyes ached, but they mounted higher and higher, and amongst the score of nests in the space of half an acre

round us, it was useless to attempt to identify their eggs, and I may as well say at once that this was the only time I was able to distinguish this species with perfect certainty on Walney or at the Farne Islands.

The following morning commenced with a Scotch mist, which soon became a downright wetting rain, but at this I rejoiced, as I hoped it would induce the terns to sit closer upon their eggs, which on a hot summer day neither they nor the oystercatchers seem to do: in the tropics it is just the reverse. To a certain extent my expectations were realized, but unfortunately a party of navvies had crossed at low water on the previous afternoon, and robbed the greater part of the nests we had left, making the birds very wild; the colony of terns amongst which I had seen the roseate tern had been completely "harried." In one of the pools left by the sea we captured a young shellduck, and might easily have caught another of the same brood, but they were too young to be reared, and after a short inspection we allowed our captive to join his brethren on a distant sand-bank. Jack succeeded, after lying in ambush for upwards of an hour, in shooting a fine shelldrake, and we found a nest in a burrow, but it was too deep to get at without a spade, and as we saw a broken egg-shell at the entrance we persuaded ourselves that the young were hatched out. A pair of Sandwich terns fell victims to their boldness, and, dazzled as I was by gazing at the whirling mass of birds around me, I fancied, as I noticed the pinky hue of the fallen bird, that I had got a roseate tern at last: brief illusion! so far as that bird was concerned, I had miserably failed at Walney.

Determined to leave no stone unturned, on the following day we took train to Peel, and, the tide being out, we walked over to Foulney Island, a mere bank of shingle with a little flat grass land at the north end, where it almost touches the south end of Walney. Here it was that Mr. J. Hancock, in years gone by, found the roseate tern comparatively abundant (*vide* Hewitson, vol. ii. p. 479, 3rd edition). A few terns, oystercatchers and ring dotterells were all the birds we saw at first, but near the middle of the island we met an individual with a gun who had taken a nest of ring dotterell, shooting one of the birds, also an oystercatcher and an arctic tern, obtaining also a nest supposed to be of this last. Observing that he did not speak of these birds by their provincial names, I asked him some questions respecting the various terns, especially if he knew the roseate tern, "Sir," replied he, "there is not a bird that frequents the shores of Great Britain I don't know."

Feeling that there was little to be learned from one who had so high an opinion of his own knowledge, I pursued my course to the north-western portion of the island. Four pairs of terns and one single bird, probably the mate of the one just shot, hovered over our heads; we soon found two nests, and on handling the eggs their anxiety and cries redoubled, coming so close that I had no difficulty in making out with my glass that they were all of the same species. On shooting one of these birds, it proved to be an arctic tern, and as during a stay of several hours we saw no others, I think I may consider these eggs as well identified.

Comforting myself with the hope that I should find the roseate tern at the Farne Islands, I left the Lancashire coast, and directed my steps to a valley in the Lake district, where, "from information I had received," I hoped to find the common buzzard still breeding, for although too late for eggs, yet in these days of strict game-preserving it is something even to see a large bird of prey in its native haunts. Arrived at the locality, we were informed by a guide well acquainted with the haunts of this bird, that there was certainly one if not two pairs in his district, and on the following day we set out for a campaign against the buzzards first and the dotterell on the fells afterwards—I confess with slender hopes of success.

Crossing a small stream in the valley our eyes were gladdened with the sight of that peculiarly north-country bird the gray wagtail (*Motacilla boarula*) which doubtless had a nest near, but impatience for higher game prevented our stopping to search for it. More than one crag was pointed out by our guide where the ravens were accustomed to build, and one where the peregrine falcon had an eyrie until quite lately. We soon got among the crags; old Isaac had just pointed out a mere bush where he had taken a nest of the carrion crow that same year, and we were making our way to what might by comparison be called a tree, in which a large nest was visible, when a wild "whew" resounded through the glen. In a few seconds our guide exclaimed, "I see him," and sure enough a pair of buzzards were sailing over the valley, one of them so near that we could distinguish the white in the wings. To my unpractised eye they seemed to exhibit a partiality for the opposite crags, but our guide assured me that their nest was on our side, so we began a rigorous examination of every crag capable of holding a nest. In a short time one was descried—a great mass of sticks almost as big as a cart-wheel and at least a foot thick, the accumulation of several seasons. I soon set foot in my first buzzard's nest;

it was untenanted, but, not knowing that better luck was in store for me, I was delighted with even an empty one. Sitting down we watched the birds, in the hope of being guided in our search by their movements, but they came no nearer, merely uttering from time to time their wild cry. How magnificent their flight! as graceful as that of the eagles I have watched with such pleasure in the mountains of Spain.

It was clear they had a nest, and we were bound to find it if we stopped there all day; on several points we saw quite fresh dung, and at last, on scaling a crag which projected from the main rock, I found myself looking right into the nest in which a young bird was instantly betrayed by his conspicuous white down. With a view-halloa that awoke the echoes far and wide, I began scrambling wildly down; at the same instant my friend, who saw the direction, raced up from the lower crag, each eager to be first, while old Isaac from his crag was objurgating us for a couple of mad fools who would break our necks. Hurrah! one egg—an addled one, of course, for the nestling was quite a fortnight old, but still a fairly marked specimen. The young bird crouched down in the nest, seeming only anxious to make himself as small as possible, but the old birds showed no further anxiety: the nest was very small and utterly invisible from below—not a stick projected from the crag to reveal its site, quite a contrast to the former one.

We proceeded to the fells, but a search of several hours for dotterell proved unsuccessful; indeed we saw nothing but some golden plover and a raven; we also heard the note of the ring ouzel, here called “crag starling.” Calling at the buzzard’s nest on our way back, we picked up our bird and egg, and proceeded through the Lake district, but I did not observe any other birds of interest. In two or three places I was shown crags where the peregrine falcon had bred in years gone by, and I was told of a female having been shot and the nest harried a week previously. These noble birds have been shamefully persecuted, and in spite of their strong local attachment they must soon be driven from the Lakes, as the eagles have been within the last fifty years. Although I kept a sharp look out for the pied flycatcher I did not succeed in meeting with it, but I was informed that it is still tolerably abundant in the woods of Lowther, which I could not spare time to visit.

A few hours took me to Newcastle, and, after a little needful slumber, I found myself soon after day-break at Beal, a small station near Holy Island, on the Northumberland coast. My “guide, philosopher and

friend" on this trip was Mr. C—, whom I had met at Barrow; he had previously visited the Farne Islands and was well acquainted with the district. As he was particularly anxious to obtain the eggs of the lesser tern, we carefully explored all the windings of the shore, but we saw none of this species, and various inhabitants assured us that it had quite deserted the locality. Two nests of ring dotterell were the only proceeds of the day's search; later on, as we crossed the Links, we came across curlew, wild duck, and redshanks, besides innumerable lapwings. Passing through the clean and picturesque village of Bamburgh, a turn in the road brought us full upon the majestic castle, a conspicuous object for miles along the coast, and finally we halted at the snug little "St. Cuthbert's Inn," on the road to North Sunderland. The landlord, Mr. Patterson, was formerly stationed at the Farne Islands, and is well acquainted with birds, but neither he nor his son, the harbour master of North Sunderland, held out to us any hopes of obtaining the roseate tern.

A pleasant sail, beguiled with chat about Grace Darling and the wreck of the "Forfar" steamer, brought us to the principal island of the group, where we called upon the proprietor, Mr. Huggup, who received us hospitably in St. Cuthbert's Tower, a place which would delight an antiquary, but which I shall not now attempt to describe. He gave us a written permit to be shown to his man who looks after the birds and eggs on "Brownsman," requesting us not to meddle with the roseate terns, even if we found any, for, so far as he was aware, there was but one pair left, which had laid three eggs, two of which he had already taken and had packed up to send to a friend: of course we gave our promise, which we incurred no temptation to break, for we did not see the bird at all.

As we proceeded to Brownsman the air and the water seemed alive with terns, here so tame as to hover within a few yards of the boat, while everywhere the eider ducks, in full breeding-plumage, dotted the surface of the water. Landing first at Staple Island, which is separated from Brownsman only at high water, we found numbers of the lesser blackbacked gulls breeding, and the "egger" having come up on his rounds, several baskets were soon filled. On a low wall we observed a single pair of herring gulls, and our boatman, who had formerly been keeper on these islands, said that there always used to be a nest there. "Yes," said the present keeper, "I harried it t'other day, and an eider duck has it now, but the ducks have to sit turn and turn about, or the gulls 'll soon have her egg and their nest too." Almost as he was

speaking the duck shuffled off from under the feet of one of our party, who had unwittingly approached the nest in the herbage at the foot of the wall, and the egg was left exposed; on our return, half an hour afterwards, we found the sucked egg-shell in the grass, and the nest was empty.

The herring gull is scarcely in the proportion of one to two hundred of the lesser blackbacked gull, and as every nest of the former is known to the keeper, there is no danger of getting mixed eggs: moreover, the eggs of the herring gull, which I was shown, were all larger than the largest of the other species: quite the reverse of my personal experience at Lundy Island, where the eggs of the lesser blackbacked gulls are generally larger and more boldly marked than those of the herring gull. My observations, based upon a large and most carefully identified series of the eggs of both species taken by myself at Lundy, had convinced me that it was impossible to distinguish between them with any degree of certainty; still, as a rule, the eggs of the herring gull were of a somewhat more elongated shape. I merely mention this as an instance of the variation of types in different localities, and to show the danger of generalizing from a series of eggs from any one spot.

Scrambling over the rocks, I almost stepped upon a female eider duck, which instantly left her nest, disclosing, to my surprise, one egg of her own and two of the lesser blackbacked gull, on which she had been sitting. It is impossible to say how the young gulls would have thriven under the care of their foster-mother, for as it was most probable that the uncovered eggs would soon be sucked by those thieves, the herring gulls, I just took them under my own protection, they being handsome specimens.

On the highest part of the island, at a spot called the "Pinnacles," from the shape of the rocks, were numbers of guillemots and one razor-bill, which had an egg in an old cormorant's nest. This was on a tall jagged rock, surrounded by water, which has never, I believe, been scaled by any amateur "egger," except Mr. Hewitson, in years gone by. On the ledges of the rocks and chasms were a good many of the so-called ringed guillemot, some with merely a rudimentary line, and others with the white streak quite distinctly marked. One of the latter was sitting on its egg, on the opposite side of a chasm only a few feet wide, and I examined it very carefully, after which I took the egg, with the "egg-stick," a pole with a net at the end, nearly succeeding in capturing the bird also. The egg in question was cream-

white with streaks and blotches of purple-black, but I saw other birds of this variety sitting on eggs of the usual green hue. Our boatman looked upon this egg as a much greater acquisition than I did, and said that a gentleman had offered him a pound for one the year before.

The ledges near the Pinnacles were tolerably well tenanted by the kittiwake gull, but I did not notice any of the common gull (*Larus canus*), although my friend Mr. Harting informs me that he saw, and I believe shot, some when he was there in May, 1863; indeed, never expecting to find them breeding there, I did not look out closely. On the Walmsies and on Staple Island were a good many puffins, and on one of them, or Great Harkness, I forget which, a large colony of cormorants, but the shag is not found, I believe. Abundance of lesser blackbacked gulls everywhere, with a sprinkling of herring gulls, and eider ducks.

Returning to the keeper's house on Brownsman, we were shown by his lad a number of eider ducks, sitting on their nests as tamely as common fowls; indeed they sat so closely, and were so difficult to distinguish from the herbage-covered ruins of an old tower, that, but for his previous knowledge of the nests, we might have unintentionally scared some of the sitting birds by going too near. There was a large colony of terns near the house, and we satisfied ourselves that all were of one species, feeling pretty confident that they were *Sterna hirundo*. With but little hope of success my friend set a horse-hair snare round one clutch of eggs, and to our great delight, before lunch was over, the lad came in bringing a bird which had been caught, and which proved to be the common tern, so that we were enabled to obtain some identified eggs. Whilst we were occupied with this colony a pair of rock pipits showed great uneasiness, coming quite close to me, and, on asking the lad if he knew of a nest, he immediately showed me one within a yard of the spot where I was standing: it contained four eggs, which I took. I may mention here that the visitor has to *buy* all the eggs he wants, even although he may have taken them himself, but the price is not ruinous.

The principal colony of the Sandwich tern is on a small flat island, one of the "Noxies," near St. Cuthbert's Tower, and on our approach a dense cloud of these birds rose on the wing; there must have been at least a thousand of them. The place was covered with their eggs, deposited in clutches of two on the bare ground. I saw none of the rich dark-ground specimens, which is perhaps attributable to their

being the second laying, still I managed to secure a few very handsome varieties. The proprietor protects these birds strictly, and does not like the nests robbed at all. In one clutch were two of the Sandwich and one of another tern together; of the common or arctic there were a good many nests. Captain Patterson was getting impatient, as there was a nasty sea rising, so we cut short our visit to the other Noxies, and steered for land with our spoils.

This concluded a very pleasant fortnight's bird's-nesting, the only drawback to which was my want of success with respect to the roseate tern.

HOWARD SAUNDERS.

Oakfield, Reigate, March, 1866.

Nesting of the Lesser Redpole and Blackbird at Dalkey.—The lesser redpole nested this year again in the same shrubbery as last year; but unfortunately the five eggs were plundered before coming to maturity. The nest was in a larch tree, and composed of twigs and roots, lined with hair, down, and the rough half-woody bud-cases of the beech. It is believed by many that the blackbird will not nest near the sea: in the same shrubbery, not one hundred yards from the sea, blackbirds always build and rear their young, together with greenfinches, thrushes, robins, blue tits, wrens, hedge-sparrows, missel thrushes, redpoles and linnets; and that they sing near the sea I can bear ample testimony.—*Harry Blake-Knox; Ulverton Place, Dalkey, July, 1865.*

Cuckoo denuded of Feathers.—In his 'Introduction to British Birds,' Bewick mentions, as if a proved fact, a cuckoo having been discovered denuded of feathers, kept alive during the winter and escaping in spring. A respectable labouring yeoman told me the same fact as having occurred to him, without knowing anything of Bewick, or hearing from me of it. I, in consequence, asked the clergyman of his parish to make inquiry, and received an apparently true deposition of two or three different cases in the same district. To account for what I must suppose such self-delusion appears impossible. The distance from the time of Bewick's event, and the present, and my not having met with any similar record elsewhere, adds to the singularity of the idea, or whatever the truth really is. I have prefaced my "depositions" with the extract from Bewick, *pro forma*. I do not give you my friend the Rector's name, &c., as he might be troubled with a correspondence, which I know would annoy. Dr. Collingwood, of Liverpool, to whom I sent the particulars, writes, "The legend is so circumstantially detailed and new to me: I had never met with anything similar, and can scarce give a guess at the explanation of them, beyond the love of the marvellous which is so usual a concomitant of ignorance. The stories are, however, interesting and curious." (August, 1862).

Bewick, 1797 ('Introduction,' p. xvii.).—"That other birds have been found in a torpid state may be inferred from the following curious fact, which was communicated to us by a gentleman who saw the bird, and had the account from the person who found it. A few years ago a young cuckoo was found in the thickest part of a close

whip-bush; when taken up it presently discovered signs of life, but was quite destitute of feathers: being kept warm and carefully fed it grew and recovered its coat of feathers: in the spring following it made its escape, and in flying across the River Tyne it gave its usual call."

D—, *Monmouthshire*, April, 1862.—"1. Betsy Stephens tells me that, some thirty years ago, when she was in service near here, a large block of wood was put on the Christmas fire, and that when the heat began to pervade it a cuckoo sung out its note: the block was removed and cleaved, and the bird found in a hole of the wood: she cannot remember whether it had feathers, or what became of it.

"2. Henry Stephens, some years ago, was in service at a farm in the parish of L—, four miles from this place: a large piece of wood was put on the Christmas fire, and soon the note of a cuckoo was heard. The wood was taken off and cleft in several pieces, and at last they found the bird quite denuded of feathers, in which he was nestling. He forgets what became of the bird, and could not tell me what kind of wood the block was of.

"3. Mark Hopkins's father had, at least forty years ago, a potato-heap in an under-ground cellar, covered with fern and straw. One day he went to have a look at his potatoes, and found a cuckoo perfectly unfeathered and in a state of torpor. They often went to look at it, and as the spring approached animation revived, the feathers began to grow, and eventually it flew away, the door having been left open for that purpose.

"I cannot get any further information: you can readily believe that the parties never even heard of Bewick."

My friend the Rector forwards these as legends 1, 2, 3; and his inquiries arose from this very Mark Hopkins, a superior kind of yeoman labourer, having *told me* that he "once heard a cuckoo in the winter," &c.—*Richard Peake; Wirewood's Green, Chepstow, February 23, 1866.*

Gular Pouch of the Bustard.—The male has, however, an essential distinction, being furnished with a pouch, capable of containing near seven pints of water, the entrance being immediately under the tongue. Dr. Douglas first discovered this singular reservoir, which the bird is supposed to fill with water, as a supply in those dreary plains, where it is accustomed to wander; this is of use also to the female while sitting, which is generally at a distance from water, or for the young until they can leave the nest. A further use of it has been observed in Morocco, where they fly the hawk at the bustard; on the attack of the hawk it has been known that the bustard has spirted out the water against the assailant, and has by that means baffled the pursuit of its enemy.—*From Daniels' 'Field Sports,' vol. ii. p. 383, with figure.*

Gular Pouch of the Bustard.—In the March number of the 'Zoologist' (S. S. 144) is an extract from the 'Field' newspaper on the "Gular Pouch of the Bustard," in which Mr. Tegetmeier has inadvertently attributed to me the rediscovery of this singular organ: it is due to Dr. Cullen, of Kustendjie, to say that the specimen shown at the Meeting of the Zoological Society referred to, was dissected by that gentleman, described and figured by him in the 'Ibis' for March, 1865, and then forwarded to the Museum of the Royal College of Surgeons. My part in the affair consisted simply in exhibiting the specimen, and making a few remarks confirmatory of and supplementary to Dr. Cullen's observations.—*W. H. Flower; Royal College of Surgeons, March 15, 1866.*

Occurrence of the Purple Sandpiper at Shoreham.—On the 6th of November, when walking on the shore near the entrance to Shoreham Harbour (Brighton side) I shot five purple sandpipers, one an old bird, the rest birds of the year. The same day I saw several flocks, varying from four to ten birds in each flock. The sea at the time was moderately rough; they were feeding and running along the sea-weed in the edge of the breakers, and were frequently covered by the foam: when disturbed they flew about one hundred to two hundred yards, and then began feeding again. They were very much tamer than the dunlins, of which I saw but very few. A man showed me one that he had shot that morning. Next day they had entirely disappeared, and I never saw a single specimen the remaining time I was at Brighton, which was about six weeks. I shot one solitary specimen in December, 1864, by the side of the wide water at Shoreham.—*A. H. Snee; 7, Finsbury Circus.*

Leach's Petrel at Shoreham.—During the gales in the latter part of November, whilst returning home by the side of the wide water between Lancing and Shoreham, as it was getting dusk, I perceived a bird the flight of which I did not know, apparently about the size of a swift, hovering and occasionally dipping down to the water. It flew with a laboured flight, and appeared to be very feeble, as it beat up against the wind. I waited until it came within fifty yards before I fired: on picking it up I found that its wing was broken. It was evidently a petrel, but too large for the stormy petrel. On further examination I found it to be a forktailed petrel: it was an old bird, in a poor and emaciated condition, in very fair plumage, with the exception of the tail-feathers, which were slightly broken and worn at the ends. The colour was sooty black, not at all of the brown hue figured by Morris. The white markings on the wings were very distinct—in fact, so much so that I was uncertain whether it might not have been *Thalassidroma Wilsoni*, until I had compared it with specimens in the British Museum.—*Id.*

Gulls breaking Mussel-shells.—While out shooting, on the 12th of February, on the sea-coast near Drogheda, I observed a herring gull, that was feeding on some shingly ground, take a large mussel, fly up with it in the air and then let it drop to the ground: on alighting, and finding that the shell was unbroken, it again took it up and repeated the process a number of times, flying higher and higher with it until it was broken. Since then I have observed both herring and peewit gulls several times resort to this sagacious expedient on this coast. While speaking of these birds, I may as well mention that in a part of the county Tipperary, some *twenty miles* from the sea, which I visited last month, the gulls are in the habit of frequenting (and dwelling on permanently, in the winter, to my belief,) the pasture-lands and marshes. They were to be seen every day, and at all times of the day, feeding with the rooks and starlings, and the inhabitants there call them “white crows,” so accustomed are they to their presence. One often sees gulls following the plough and feeding on the lands a few miles from the sea, but I have never seen them frequent, to such an extent, a district so far from their marine homes as the one I have just mentioned.—*W. Vincent Legge; South Shobury, March 20, 1866.*

Erratum.—In my last communication (S. S. 146, line 5), for “Curlews and lapwings nesting,” read “Curlews and lapwings resting.”—*W. V. L.*

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

March 5, 1866.—W. W. SAUNDERS, Esq., V.-P., in the Chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—
 ‘Schriften der Königlichen Physikalisch-ökonomischen Gesellschaft zu Königsberg,’ 1864, Parts 1 & 2; presented by the Society. ‘Synopsis des Neuroptères d’Espagne,’ par A.-Edouard Pictet; by the Author. ‘Una Rectificacion mas acerca del Animal-Planta; y descripcion de un nuevo Insecto?’ par Antonio del Castillo; by Dr. Gray. ‘The Zoologist’ for March; by the Editor. ‘The Entomologist’s Monthly Magazine’ for March; by the Editors.

Exhibitions; &c.

Mr. W. H. Groser said that when at the Meeting in December, 1865, a doubt was expressed whether the noise made by *Anobium* was caused by percussion, he had a strong conviction that the fact thus disputed rested on the authority of competent observers, and he had since met with the following passage respecting *Anobium tessellatum* in the Rev. L. Jenyns’ ‘Observations on Natural History:’—

“It is curious to observe one of them labouring, as it were, to make itself heard; raising itself on its hinder legs it beats forcibly on the wall on which it stands with the fore part of the head, giving seven or eight strokes at a time in pretty quick succession.”

Mr. Groser had written to Mr. Jenyns, asking if this statement was made from his own actual observation, and Mr. Jenyns replied, “I am quite sure of the correctness of what I have stated in my ‘Observations,’ &c., respecting the tapping of *Anobium tessellatum*, having witnessed it repeatedly. With regard to *A. striatum*, I do not recollect now (it is so many years since) whether what I have added in reference to that species was stated on the ground of having *seen* it make the noise in question or only having heard it.”

Mr. S. Stevens exhibited a Japaense collection of butterflies and beetles from Hakodadi, and remarked upon the close resemblance of many of the species, and those indigenous to this country.

Mr. Tegetmeier exhibited a general collection of Japanese insects from Nagasaki, the greater part being Lepidoptera and Coleoptera.

Mr. W. W. Saunders, Mr. F. Smith, Mr. Pascoe and Mr. M’Lachlan made observations upon the number of Japanese forms, of Lepidoptera, Coleoptera and Neuroptera, which were of an European type.

Mr. F. Smith, on behalf of Mr. S. Stone, exhibited a singularly compact and symmetrical nest of *Vespa sylvestris*; also nests of *Vespa rufa*, *V. germanica* and *V. sylvestris*, which were constructed in 1864 by a few workers only. The original nests to which the wasps belonged, together with the queens and the principal part of each

colony, had been removed by Mr. Stone; a few workers which remained had recommenced building, but, deprived of the guidance and control of the queen, had produced in each case a monstrosity, an irregular and shapeless piece of clumsy workmanship. There were young larvæ in sealed cells constructed by the workers, which larvæ were the produce of eggs laid by the workers.

Mr. Tegetmeier had known workers of the hive-bees to lay fertile eggs, but these had always produced drones; two or three eggs were laid in one cell, but not more than one ever hatched.

Mr. F. Smith pointed out that the sealed cells in the wasps' nests exhibited were the cells, not of drones, but of workers, of females,—which was an extension of the observation and theory of Von Sieboldt.

Mr. M'Lachlan exhibited a twig of mulberry tree sent from Saugor, Central India, by Captain Alexander, on which were deposited in rows numerous eggs, which were probably those of a species of *Ascalaphus* or *Myrmeleon*; the arrangement of the eggs was precisely similar to that of the European *Ascalaphus macaronius*, as described by Dr. Brauer; the young larvæ that had emerged from the eggs were also exhibited. With reference to Geoffroy's observation, that *Myrmelcon formicarius* immediately after emergence deposits one or two eggs, which, however, are unproductive, Mr. M'Lachlan said that his own observations had convinced him that these so-called eggs were not eggs at all, but were in reality the meconium, which, instead of being voided in a liquid state, was in this instance solid, and took the form of egg-like lumps.

The Rev. O. Pickard-Cambridge (who was present as a visitor) exhibited a general collection of insects made by himself in Palestine, Syria, Lesser Asia, Greece, &c. All the specimens were admirably preserved and set, notwithstanding that the collection was made under the difficulties of being almost always on horseback, and seldom staying more than a day in one place; moreover his principal object of pursuit had been spiders, of which he had captured a great number and of very peculiar forms.

Prof. Westwood called attention to the "Schriften der Königl. phys.-ökon. Gesellschaft zu Königsberg" for 1864, in which was described and figured a new Amphipod—a marine animal—in gum copal or gum animé.

Paper Read.

Mr. Edward Saunders read a paper intitled "Catalogue of Buprestidæ collected by the late M. Mouhot in Siam, &c.; with Descriptions of new Species." Forty-four species were enumerated, of which thirty-three were described as new; three new genera were characterized—*Cardiaspis*, allied to *Dicercomorpha* of Henri Deyrolle; *Engycera*, allied to *Melobasis*; and *Oncomœa*, between *Brachys* and *Pachyscelus*.

New Part of 'Transactions.'

Trans. Ent. Soc. third series, vol. ii. Part 6 (being the concluding part of that volume) was announced as ready for distribution.—J. W. D.

*Two Letters from the late Charles Waterton, Esq.,
of Walton Hall.*

[THESE letters, although never intended for publication, contain so much that is really interesting to the naturalist, that I do not think it right to withhold them, more especially as everything connected with the illustrious deceased, if it tend to throw light on his favourite pursuit, has become, as it were, public property since the death of the great naturalist.—*Edward Newman.*]

Walton Hall, November 6th, 1845.

My dear Sir,

I cannot leave England without dropping you a line to wish you all manner of success, and to say how sorry I feel that such a paper as "The Two Foxes" should have found its way into the respectable pages of the useful 'Zoologist' [Zool. 1160]. The fox must have seized the goose by the leg; the goose then would have attempted a flight, and must have dragged the fox to the surface, if not out of the water altogether.

No goose would dive in such a predicament. On the contrary, flight *must* have been its motion. Fancy, then, the long and strong wings of the goose expanded, and its bulky body pressing upwards. In the meantime, Reynard, underneath the surface, and not able to breathe, is to succeed in pulling down this firmly resisting body below it. Foxes never take the water except through the pressure of hounds or of hunger. It was hunger in this case. Still the thief did not eat the food procured at such a risk, and in a manner so repugnant to his usual habits, but must e'en try his luck again, all dripping wet; and he actually entered the water a second time for a second goose. His supernatural reasoning powers are then introduced by way of finale to the farce. I could write a long paper on this gross Yankee fabrication, which may possibly be of use some time or other, should Drs.* Macgillivray and Audubon lay their heads together to concoct a second edition of the "Biography of Birds."

I write this to you as a friend. You may show it to whom

* See my 'Autobiography,' second part.

you please. I leave England for Madeira to-morrow week. In the meantime, I remain, my dear Sir,

Very truly yours,

CHARLES WATERTON.

Edward Newman, Esq.

Private.

Walton Hall, January 27th, 1846.

My dear Sir,

Although it is not my intention to defend the poor hedgehog in the pages of the 'Zoologist,' still, as my name has been introduced into your number of January [Zool. 1204], I have ventured to send you a few remarks on Mr. Wolley's paper.*

1st. There appears an incorrectness in his statement, for his birds were "chickens," and then one of them became "a full-grown fowl" in the same night.

2ndly. As the hedgehog had the run of a small walled garden, might he not have supposed that the hole in the hencoop was a hole in his prison-wall? If so, he would enter it for flight, and not for food.

3rdly. His not supping on "beetles and other insects" and "milk," which the walled garden was known to contain, argues strongly that his capture and imprisonment had destroyed his appetite for the time. Hence I would conjecture that he squeezed himself into the coop for bolting, and not for belly.

4thly. Disappointed in not finding an outlet in the posterior of the hencoop, I can easily conceive that he made a sufficient stir to cause the fowls to leave their perch, and that, in their fright, at the sight of a suspicious intruder, they would set up a cackling loud enough to rouse Mr. Wolley from the arms of Morpheus.

But as Mr. Wolley was not present when the uproar commenced, I am at a loss to discover how he knew that the hedgehog had first attacked the fowls. Might not the fowls have attacked the hedgehog? I once saw a hen attack and kill a magpie.

5thly. "Thrice and once the hedgehog whined." This whining goes far to convince me that the hedgehog was fighting, and not feeding; for I know, and can prove by many observations, that the hedgehog takes its prey in *silence*.

* The paper which Mr. Waterton refers was, I think, from the pen of the Rev. J. Pemberton Bartlett, not Mr. Wolley.—*E. N.*

6thly. Mr. Woolley's observation, that the hedgehog *would* have drunk the life blood of the fowls, had not his timely arrival prevented the tragedy, is mere surmise, without apparent foundation, for if the hedgehog had refused the milk, it is but just to suppose that he would have no immediate appetite for blood. Indeed his capture and captivity, I should think, were quite sufficient to engross all his thoughts for the first night. Thus you see that I am not a convert to Mr. Woolley's doctrine. My park is well stocked with hedgehogs, and my hen-house has an aperture on a level with it, for the ingress and egress of the fowls; still not one solitary hedgehog has ever been seen in the hen-house, or a single fowl or chicken ever known to have been killed by this quadruped.

By the way, I have a family of milk-white hedgehogs in the park.

I see, by your December number, that our wise ones in Ornithology have raised the Canada goose to the dignity of a swan.

It appeared a swan to Cuvier, "Me parait aussi un vrai cygne." According to Peter Pindar, Sir Joseph Banks once thought that a flea might be a lobster. Cuvier was a great philosopher and an honest gentleman; and he knew a good deal about the *form* of some birds: but, for the *habits* of birds in general he knew as much about them as I did about his own grandmother.

I cannot hail the Canada goose as a swan for the following reasons:—

1st. The swan does not obtain his full adult plumage until the third year; whereas the Canada goose is in mature plumage, like all other geese, by the end of the first year. 2ndly. The swan does not breed till the third year; but the Canada goose rears its young ones in the second year. 3rdly. The Canada goose will breed with other geese, even with the diminutive Barnacle goose; still the swan is never known to make love to any goose. 4thly. The swan takes a mouthful of food, and immediately immerses his beak in the water, when the food undergoes a kind of filtering process; still the Canada goose never does this. 5thly. The swan does not feed upon the grass in the pasture; but the Canada goose lives *entirely* on it. 6thly. The Canada goose does not pursue, and even kill, its progeny of the former year, at the next breeding-season; whereas the swan invariably does this. 7thly. The swan is what may be styled a mute

bird; but the Canada goose is most vociferous, on wing and on foot, and when disturbed.

N.B. When I say *entirely*, I mean the year throughout, except in harvest time, when the Canada goose will frequent the corn-fields.

I have always forty or fifty Canada geese here; and I have such uncommon opportunities of looking into their economy, that I fancy I could write a very long chapter on their nature and habits. They are just now flying round the house night and day, making an incessant trumpet noise, preparatory to breeding.

As postage costs nothing now, and as the reading of this letter will only take up about two minutes of your precious time, I feel no scruple in troubling you with these remarks. I arrived from Madeira about a fortnight ago. I had taken my sister to pass the winter there. I should have returned this week, but Her Majesty has detained me to prosecute thieves and poachers at the Lent Assizes. Six of the villains are lodged in York Castle.

Believe me, my dear Sir, very truly yours,

Edward Newman, Esq.

CHARLES WATERTON.

Notes on the Zoology of Spitsbergen.

By ALFRED NEWTON, M.A., F.L.S., F.Z.S.*

IN the month of May last, Mr. Edward Birkbeck offered me a berth in his yacht, the "Sultana," R. T. Y. C., on a voyage to Spitsbergen. As this was a country I had long been desirous to visit, I was very glad of the opportunity of seeing it, which had so unexpectedly presented itself. On the 31st of May I found myself on board the vessel at Lowestoft, and the following morning we sailed northward. After a passage protracted by some tedious calms, we cast anchor in the Bay of Hammerfest on the evening of the 26th June. Here it was necessary to stay for some days, while a Norwegian "jægt" was being equipped to accompany us, and to take us, if necessary, into the ice, where the yacht, from her extreme length, would become embarrassed, and from her slight build dangerous. Late in the evening of the 2nd July the necessary preparations were completed, and the

* Reprinted from the 'Proceedings of the Zoological Society of London,' November 8, 1864, and kindly communicated by the author.

"Semmline," a sloop of some thirty or forty tons, got under way. The next morning the "Sultana" followed, and, overhauling her consort in the narrow seas, in the course of the afternoon lost sight both of her and the land of Norway. On the afternoon of the 6th July we made the South Cape of Spitsbergen, bearing N.E.

Our first rendezvous having been appointed about halfway up the deep bay marked on English charts as Wibelan's Water, and known to Norsk walrus-hunters as Stor Fjord, which indents the archipelago of islands forming Spitsbergen, our course was altered accordingly; but we were soon brought up, after passing a good deal of drift ice, by the appearance of very closely packed ice, stretching across as far as the state of the atmosphere would allow us to see it. This to our pilot, a man whose knowledge of Spitsbergen is scarcely surpassed by any one, was a manifest indication of the fjord being completely blocked up, and he did not hesitate to order us to proceed to our second rendezvous in Ice Sound, on the west coast. Thither we made sail, trying as we passed northward successively to enter Horn and Bell Sounds, both of which we found to be impracticable from the same cause as had been the Stor Fjord. On nearing Ice Sound, on the afternoon of the 8th July, we found a good deal of ice drifting out of its mouth; but it was of such a kind as to cause no risk to the ship, with our careful captain and pilot. While we were watching with interest the novel scene presented to us by the varied shapes of the frozen masses through which we were navigating, there was a cry of "White whales!" and a "school" of *Beluga catodon* passed across our bows. Though there were the vivid hues of drifting ice-blocks with which to contrast them, I was agreeably pleased to see that their colour stood this high trial. When, some years ago, I saw the so-called "white porpoises" of the river St. Lawrence, identified by Dr. Gray (*Cat. Brit. Mus. Cetacea*, pp. 78, 79) with this species, they had a very tallowy appearance; now the worst that could be said of these beasts is that they looked the colour and consistency of a good spermaceti candle. There were at least six or eight of them swimming at very short distances from one another, and they glided rapidly through the water with an easy and almost graceful roll, now and then emerging from the surface sufficiently to show the whole of their bodies.

It is not my intention now to say much concerning the birds of Spitsbergen; but I must mention that the sound we were entering presents one of the most beautiful sights to the eye of the ornithologist

that can possibly be conceived. The species which frequent Spitsbergen are few in number, much fewer than had been thought prior to the publication of Herr A. J. Malmgren's admirably critical papers;* but the number of individuals is past all computation. It will be sufficient here to name the species I observed at this time, and this I shall do somewhat in the order of their comparative abundance. First *Mergulus alle*, *Uria arra*, and *Cepphus grylle*; † then *Rissa tridactyla*, *Somateria mollissima*, *Procellaria glacialis*, *Fratercula glacialis*, *Larus glaucus*, and, lastly, an *Anser* which I shall specify hereafter. All these, excepting *Larus glaucus*, we found breeding around Ice Sound; indeed, I may say, in the immediate neighbourhood of Safe Haven, a commodious inlet on its northern shore, where the yacht dropped her anchor on the morning of the 9th July.

The whole of the next week was employed by our party in exploring, with different objects in view, the shores of the sound, or, as it should be more properly called, fjord, for it extends at least fifty miles into the interior, and appears to have no connection with Wibelan's Water or any other inlet of importance. Almost every depression on its northern side is occupied by a glacier, which generally fills it nearly to the brim, and, with but one exception, these glaciers are only terminated by the sea; but along its southern shore are some four or five bays of various sizes, and between them various valleys which, being quite free from ice, are more or less fertile and afford sufficient pasturage for numerous herds of *Rangifer tarandus*. These deer are tolerably abundant: they are certainly smaller than the Lapland reins, whether wild or tame; and though I can hardly profess to speak generally on the subject, yet all the antlers which I saw in Spitsbergen seemed to me to be slighter in the beam than those of the continental race; nevertheless, the points being in old stags considerably elongated, the expanse of antler was not much inferior. The average type of a good Spitsbergen head is very well represented by the first figure in the 'Fauna Boreali-Americana' (vol. i. p. 240), of the so-called barren-ground caribou (*Cervus tarandus*, var. *α. arctica*, Richardson); and it is probable that the same causes which influence

* Öfversigt af Kongl. Vetenskaps-Akademiens Förhandlingar, 11 Febr. 1863.

† P.S. August 23, 1865. More recent investigations have led me to believe that the *Uria mandti* of Lichtenstein is specifically distinct from the *Colymbus grylle* of Linnæus. I never met with the latter in Spitsbergen, all the specimens of black guillemots which I have seen in and from that country being referable to the former.

the development of the antlers in the rein-deer of the *mauvaises terres* in North America affect in like manner those of their Spitsbergen brethren. These last are said, by persons who have wintered there, not to migrate from the country; at least they or their tracks on the snow are seen "as soon as it begins to get light" in spring. At the same time it is just possible that some of them may wander over the frozen sea by way of Giles Land—and other islands, perhaps, of which we have as yet no knowledge—to Nova Zembla, and so on to the country of the Samoides. Certainly a hind killed by my friend Mr. Graham Mannors-Sutton had one ear slit in a manner that was recognized by some of the "Semmoline's" crew (most of them Quæns) as a mark of ownership. I must, however, add that, adverse as I am to doubt the technical knowledge of an expert, the slit in question seemed to me as if it might have been very well caused by another deer in fighting, or, even if it were of human origin, such as might have been made by some one who had caught the animal when a calf, and let it go again; but this last solution of the difficulty excited a laugh at my simplicity among the Quæns, who could not conceive it possible that a hungry hunter should show compassion towards the very youngest deer. All that we saw the first week of our being in the country still retained a considerable quantity of their nearly white winter clothing, thus rendering their detection, when viewed against the dark-coloured ground, a very easy matter, even at a great distance. These animals also were in poor condition, contrasting in this respect strongly with those killed about a month later, when their bodies on being flayed were found to be covered with fat nearly two inches thick. At this time they had entirely got rid of their overcoats, and were clothed entirely in a short but close felt of dark mouse-colour. Judging from the gralloch, in the summer, lichens seem to form only a small article in their diet, their food then consisting chiefly of mosses, grasses, and any other herbage.

The arctic fox (*Canis lagopus*) is pretty numerous along the shores of Ice Sound; and we not only frequently saw examples of it, but in the immediate neighbourhood of the cliffs wherein the Alcidae were nesting, one could, by listening almost at any time in the twenty-four hours, hear its yapping bark. It is of course the chief enemy of all the different kinds of birds, and their dread of it appears to influence them greatly in their choice of breeding-quarters. What the foxes do to get a living in winter, when the birds have left the country—for I imagine that the ptarmigan (*Lagopus hemileucurus*) is the only species

that is permanently resident—is one of the most curious questions that has presented itself to my mind for some time. The greater number of them are said to remain on the land, and to be as active during the polar night as they are in summer; yet there are no berries by which they might eke out their existence, and there can be no open water, on the margin of which they might find food, within miles of their haunts. The most natural explanation that occurs to one is that they lay up a stock of provisions; but nobody, that I am aware of, has ever found such a store closet,* or has observed any tendency to hoarding in their habits. In Spitsbergen I believe that none of the varieties known as the blue, the black, or the silver fox have been noticed. The summer pelt does not differ from what it ordinarily is in other countries, and the winter coat seems to be invariably white.†

We noticed two species of Phocidæ in the waters of Ice Fjord. I am indebted to Mr. Malmgren for the information that these are the *Callocephalus fœtidus* and *Phoca barbata* of Dr. Gray's 'Catalogue of Mammalia in the British Museum.' The former is called by the Norwegians who frequent the coast of Spitsbergen "steen-kobbe," or stone-seal, probably because it is usually seen near rocks, or at any rate at no great distance from land; the latter is known as "stor kobbe," great seal, or less frequently "blaa kobbe," blue seal. How this last name came to be applied to it I do not know. As far as I can judge, it is very inappropriate. When dry, its fur is of a dirty yellowish white; and a beast of this species lying on a floe has exactly the appearance of a lump of discoloured ice, so that the hunter often takes one for the other. In the water it seems to be much of the

* Since the above was written, it has occurred to me that a considerable collection of shells of *Mya truncata*, which I found one day on the moraine of a glacier in Safe Haven, may possibly have been due to the causes suggested in the text.

† I have never seen it remarked, though it is unquestionably the case, that nearly all the Icelandic examples of *Canis lagopus* are "blue" foxes; that is to say, their winter coat is of nearly the same colour as their summer coat. This fact, I think, must be taken in connexion with the comparatively mild climate which Iceland enjoys in winter, and, if so, is analogous to the circumstances of the alpine hare (*Lepus timidus*, Linn., non auct.) always becoming white in winter in Scandinavia, generally so in Scotland, and but seldom in Ireland. The common squirrel (*Sciurus vulgaris*) is another case in point; and all three may be considered illustrative of the vexed questions of the specific distinctions between the great northern falcons (*Falco gyrfalco*, *F. candicans*, and *F. islandicus*) and of the specific identity of the red and willow grouse (*Lagopus scoticus* and *L. albus*).

same colour as most seals—a dark iron-grey above, lighter beneath. It is a very powerful animal: I saw one that had received three Enfield bullets through the nape of its neck, and had been bleeding profusely for about half an hour; yet it nearly succeeded in capsizing a large whale-boat with five men in her, owing to the clumsiness of the harpooner. We constantly saw this species at a considerable distance from land—ten to twenty miles, off the west coast of Spitsbergen, mostly between Bell Sound and Ice Fjord; and a young male of the previous year was shot from the deck of the yacht, and afterwards harpooned, on the 29th July, about fifteen miles from South Cape.

We saw no other mammals in Ice Fjord. Our pilot pointed out to me one day a place where, many years ago, a jægt's crew, of which he himself was one, killed nine polar bears; but no such good fortune attended us. This same man informed me that he knew of the occurrence in Spitsbergen of a "hermelin," a species which has not hitherto been recorded from that country, though it is probable that the "creature, somewhat larger than a weasel, with short ears, long tail, and skin spotted white and black," stated to have been seen on Low Island by Dr. Irving in Lord Mulgrave's Voyage,† was nothing else but *Mustela erminea*.

I must here mention the pleasure it was to me, and, I am sure, to all the other members of our party, to fall in with the Swedish Scientific Expedition, who are engaged in making a series of preliminary surveys, preparatory to measuring an arc of the meridian, in Spitsbergen. To Professors Nordenskjöld and Dunér and Herr Malmgren our best thanks are due for their kindness in furnishing us with much valuable information, the results of their former arduous explorations in this distant country.

On leaving England there had been two points in the Ornithology of Spitsbergen to which I had especially meant to apply myself. The first was the obtaining of a good series of specimens of the Spitsbergen *Lagopus*, a single example of which, brought from that country in 1855 by my friend Mr. W. Sturge and the late Mr. E. Evans, had been described by Mr. Gould in our 'Proceedings' for 1858 (p. 354) as a distinct species, under the name of *L. hemileucurus*: the second was the determination of the large species of wild goose, which the same gentlemen found breeding on the shores of Ice Fjord (Ibis, 1859,

† 'A Voyage towards the North Pole undertaken by His Majesty's command, 1773.' By Constantine John Phipps. London: 1774, page 58.

pp. 171, 172). Of the latter, as I have already mentioned, we saw a considerable number; and though we failed in our efforts to obtain a specimen, yet, through Mr. Malmgren's kindness, I am able to declare that the species is *Anser brachyrhynchus*, since I saw and examined two examples in his possession. Of the first, though, I regret to say, unsuccessful in finding out its haunts, I likewise had the pleasure of being shown by Mr. Malmgren an adult male, killed but a few days previously, and still unskinned. Its plumage, however, presented scarcely any trace of the great vernal change which takes place in this group of birds; and, except that I am confident that the ptarmigan of Spitsbergen is distinct from that of continental Europe and Britain, I hardly like to form an opinion respecting its specific distinctness from the ptarmigan of Iceland, Greenland, and Labrador, which I am inclined to consider as forming but one species, to which the name *L. rupestris*, being the oldest, should probably be applied.

After passing an agreeable week in Ice Fjord, and being joined by our Norwegian consort, we returned southwards, and proceeded towards the most western of the Thousand Islands. Here some of our party were transhipped to go to the eastward in the 'jægt' in search of walruses, while the 'Sultana' made another attempt to ascend the Stor Fjord; but, finding the ice at a distance of about twenty miles above the bight still unmoved, she was compelled to retrace her course, and await the return of the jægt party off the Thousand Islands. In Stor Fjord we made the acquaintance of the third species of seal known in Spitsbergen, the very widely distributed *Pagophilus grœnlandicus* of Dr. Gray's Catalogue. This animal is known to the frequenters of the coast as the "Jan-Mayen kobbe" and "svart-side;" but most generally as the "springer," from its lively actions in the water. It is of a social disposition, and we saw it in herds not less than fifty in number. These were very fond of swimming in line, their heads alone above water, engaged in a game of "follow-my-leader;" for on the first seal making a roll over, or a spring into the air, each seal of the whole procession, on arriving at the same spot, did the like, and exactly in the same manner. While viewing this singular proceeding (and I had many opportunities of doing so), I could not but be struck with the plausibility of one of the suggested explanations of the appearance which has obtained so widespread a notoriety under the name of the "great sea serpent." If any rule of the game in which *Pagophilus grœnlandicus* loves to indulge ever would permit the leading seal to swim (say) one-third out of water,

as I have often seen *Phoca barbata* do, I could quite understand any person, not an unromantic naturalist, on witnessing for the first time such a sight as I have tried to describe, honestly believing that the mythical monster was actually before his eyes. I never had the opportunity of closely examining a "springer;" but one learned immediately to distinguish this species from the other two I have mentioned: not only its wonderful activity in the water, but its elongated head (even when the size of its body, just about intermediate between *P. barbata* and *Callocephalus foetidus*, was not to be ascertained) was quite sufficient for that purpose. This species resorts in great numbers to the ice in the neighbourhood of Jan Mayen, whence one of its common names; and in former years several vessels were annually equipped at Tromsø and Hammerfest in pursuit of it; but I believe that of late this practice has been a good deal discontinued.

Although none of our party were lucky enough to get a glimpse of a walrus, I cannot refrain from mentioning here some circumstances connected with the history and habits of that curious and mighty beast. It is pretty well known that in the summer of 1853 a living example was deposited in our gardens, which, however, after a few days languished and died, probably from having been fed on a diet so unnatural to it as oatcake.* Yet this is by no means the only instance of this animal being brought alive to England. So long ago as 1608, the ship "God-speed," commanded by Master Thomas Welden, performed a voyage to Cherie, now commonly called Bear Island, and in the account of the expedition it is written—

"On the twelfth [July] we took into our ship two young morses, male and female, alieve: the female died before we came into *England*: the male liued about ten weeks. When wee had watered; we set sayle for *England* about foure of the clocke in the morning. * * *

"The twentieth of August, wee arriued at *London*; and hauing dispatched some priuate businesse, we brought our lining morse to the Court, where the king and many honourable personages beheld it with admiration for the strangenesse of the same, the like whereof had neuer before beene seene alieue in *England*. Not long after it fell sicke and died. As the beaste in shape is very strange, so is it of strange docilitie and apt to be taught, as by good experience we often proned."†

* See 'Zoological Sketches,' by J. Wolf; edited by P. L. Selater. Cf. also J. E. Gray, P. Z. S. 1853, p. 112.

† HAKLUYTUS POSTHUMUS OR PURCHAS HIS PILGRIMES, &c. By Samuel Purchas, B.D. London: 1624. vol. iii. p. 560.

Now surely what a rude skipper, in the days of James I., could without any preparation accomplish, this Society ought to have no great difficulty in effecting; and I trust that the example may not be lost upon those who control our operations. From inquiries I have made, I find it is quite the exception for any year to pass without an opportunity of capturing alive one or more young examples of *Trichechus rosmarus* occurring to the twenty or thirty ships which annually sail from the northern parts of Norway, to pursue this animal in the Spitsbergen seas. It has several times happened that young walruses thus taken are brought to Hammerfest; but, the voyage ended, they are sold to the first purchaser, generally for a very trifling sum, and, their food and accommodation not being duly considered, they of course soon die. Lord Dufferin bought one which had been taken to Bergen, and succeeded in bringing it alive to Ullapool;* and Mr. Lamont mentions another which he saw in the possession of Captain Erichsen.† In making an attempt to place a live walrus in our Gardens, I do not think we ought to be discouraged by the bad luck which has attended our efforts in the case of the larger marine Mammalia. Every person I have spoken with on the subject corroborates the account given by honest Master Welden of the “strange docility” of this beast; and that in a mere financial point of view the attempt would be worth undertaking is, I think, manifest. To the general public perhaps the most permanently attractive animals exhibited in our Gardens are the hippopotamuses and the seals. What then would be the case of a species like the walrus, wherein the active intelligence of the latter is added to the powerful bulk of the former? There is also another consideration why we should make the attempt. In a few years it is probable that the difficulties of obtaining a live example of the walrus will be much greater. Its numbers are apparently decreasing with woful rapidity. The time is certainly not very far distant when *Trichechus rosmarus* will be as extinct in the Spitsbergen seas as *Rhyina gigas* is in those of Behring’s Straits. I see no reason to doubt the assertion, or perhaps it would be safer to say the inference, that in former days walruses habitually frequented the coasts of Finmark; in the sixteenth and seventeenth centuries they were certainly abundant about Bear Island: they are spoken of there, as “lying like hogges upon heaps” by the old writer I have before quoted; yet for the last thirty years probably not one has been seen

* ‘Letters from High Latitudes,’ pp. 387—389.

† ‘Seasons with the Sea-Horses,’ pp. 26, 27.

there. Now they are hemmed in by the packed ice of the Polar Sea on the one side and their merciless enemies on the other. The result cannot admit of any doubt.

But to continue my story from this digression, which I hope, however, may not be without its use. On the 10th of August our two ships again joined company; and, finding it was useless attempting either to get up the Stor Fjord or sail further to the eastward, we again rounded the South Cape and made for the northward. The season, however, being now so far advanced, our pilot declined the responsibility of taking the yacht further north than Ice Fjord; and accordingly, after having to steer considerably to the westward to avoid the heavy ice which beset the coast about Horn Sound, we found ourselves, on the afternoon of the 14th, once more at our old anchorage in Safe Haven. Here we remained another week, most of our party finding plenty of occupation in deer-stalking; but I was not able to add much to my stock of zoological knowledge. The deer were now in magnificent condition, and nineteen were shot, making, with those obtained the week the yacht was there in July, a total of forty-seven. On the night of the 17th the salt water of the Haven was frozen over, and two days afterwards the sun set. On the morning of the 21st we weighed anchor, homeward bound. On the 24th we spoke a Norwegian jægt, engaged in the fishing of *Scymnus borealis*, an example of which was hauled up just as we passed.* The same day we sighted Bear Island, which on our outward voyage we had not seen, owing to the fog; and on the 27th we reached Hammerfest.

It remains for me to add a few words on the Cetaceans we saw. I have already mentioned Beluga catadon, which we observed also on two other occasions. This is the only species of which I can speak definitely, though we certainly saw at least four others. Of these, the

* This fishery has of late years assumed considerable importance. The vessels employed in it mostly do not go so far north, but keep about midway between Bear Island and the North Cape of Europe. There they anchor in deep water with a light cable, which they cut if it comes on to blow suddenly. The sharks are caught with a baited hook at the end of a very long line. As soon as one is hooked, he is hauled up on deck by a windlass, and beaten on the head until he is motionless. His liver, which alone is required of him, is then cut out; and, his entrails being fully inflated with air, his body is heaved overboard to float away quite clear of the vessel. The cause of this apparently wanton cruelty is alleged to be the difficulty of otherwise disposing of the carcase; for the fishermen say that if the animal were killed, they would not catch another shark until the dead one was entirely eaten up by his brethren, a process that might involve a delay of some days.

first was a large black fin-backed whale, noticed three or four times; the second a smaller animal, perhaps about thirty or forty feet long, of which some half a dozen came and played round the yacht on the 12th of August. In general form, especially in the *esocine* shape of the head, these corresponded very closely with the engraving given by Dr. Scoresby (Arctic Regions, vol. ii. pl. 13, f. 2) as that of *Balæna rostrata* (= *Balænoptera rostrata*, *J. E. Gray*); but I rather hesitate to refer them positively to that species, on account of their colour, which was apparently of a uniform light reddish brown. I had an excellent opportunity of observing these whales, for they kept with us about a quarter of an hour, sometimes passing under the ship, and often coming up close alongside, within perhaps thirty yards. On the following day I saw a school of grampuses, with extremely long and high dorsal fins; but this was the only occasion on which the species was noticed. Some kind of porpoise, on the contrary, was seen more than once.* In addition to these Cetaceans, the right whale (*Balæna mysticetus*) and the narwhal (*Monodon monoceras*) are well known to inhabit the Spitsbergen seas. Mr. Malmgren, in his careful paper before alluded to, enumerates six or perhaps seven species of whales, not reckoning a porpoise. We therefore have seven or eight Cetaceans, seven Carnivores (including *Ursus maritimus*, on which I have no remark to make) and one Ruminant as the sum total of the Mammalian Fauna of Spitsbergen. Without extending these notes by going into details, I may here state that I think the bird-fauna cannot be reckoned at more than twenty-seven species. We therefore have the singular result of a country, say as large as Ireland, where the number of Mammalian bears to the number of Ornithic species the ratio of 15 or 16 to 27.

ALFRED NEWTON.

The Meadow or Bank Vole (*Arvicola riparia*, Yarrell) at *Lytham*.—On the 3rd of April, while removing some potatoes from a pit, I found an individual of the above species lying in a kind of nest, which apparently had formed its hybernaculum during the winter; it was dead and partially decayed. The nest was made among the

* I feel very confident of the truth of this statement; but I find no mention made of any porpoise in the Spitsbergen seas by either Scoresby or Malmgren. This fact I unfortunately had not noticed until my return home; so that (porpoises being in general of so common occurrence on a sea voyage) I neglected to record, as I otherwise should certainly have done, the dates and localities of their appearance. It is of course possible that what I took to be porpoises were only the young of some larger Cetacean; but I do not think this was the case.

potatoes, about eighteen inches from the ground, and was composed of soft short straws. In the same pit I captured a large male longtailed field-mouse. It was ensconced in a nest built on the ground. This nest was more compact and made of finer materials. The potatoes were gnawed, and had served for their winter food. The meadow vole had probably been worsted in a battle with the mouse, and had crept into its retreat and died.

Length of vole from nose to end of tail, without projecting

| | | | | | | | |
|----------------|---|---|---|---|---|---|--------------------|
| hairs | - | - | - | - | - | - | 4 inches 11 lines. |
| Length of tail | - | - | - | - | - | - | 1 inch 9 „ |
| „ ear | - | - | - | - | - | - | 4 „ |

Dimensions of meadow vole given by Mr. Macgillivray, in 'Naturalists' Library:—

| | | | | | | | |
|--------------|---|---|---|---|---|---|-------------------|
| Total length | - | - | - | - | - | - | 5 inches 2 lines. |
| Tail | - | - | - | - | - | - | 1 inch 9 „ |
| Ear | - | - | - | - | - | - | 6½ „ |

I have enclosed the remains of the vole, in order to be certain that it is the species above named.—*George Roberts; Lofthouse, Wakefield.*

Rats climbing Trees.—In the April number of the 'Zoologist' (S. S. 158), Mr. Peers mentions as an unusual circumstance the fact of a rat climbing a hedge. From one cause or other rats will occasionally take to trees and bushes, and I have met with several instances of this climbing propensity. When pressed by ferrets and obliged to bolt from their holes in a hedge-bank, they will sometimes endeavour to effect an escape by ascending the hedge, and, should it be a closely-clipped fence, will work their way along it most expeditiously. It does not, however, necessarily require the strong incentive of a ferret in the rear to make these expert foragers take to timber. I once shot a rat as it sat on the slender bough of a willow overhanging a pond, and about eight feet above the water: it had gone out so far on the branch that I do not think it could possibly have retraced its steps without falling into the water. Last summer I saw a pair of brown rats working their way along a closely-growing fence; they were in the centre of the hedge and about a foot from the top: having my gun with me at the time I took the opportunity of putting a stop to the career of one, the other escaping. My idea is that they were out on a birdnesting expedition. I have strong suspicions that amongst their many other delinquencies rats not unfrequently take to the hedges to search for eggs, as where they abound I have frequently found, in closely-clipped fences, nests with the eggs abstracted, and in places where I am certain no prying birdnester had been. I recollect very well, as a boy, when stopping at an old country house in this county, great complaints were made about the rats stealing the nuts from a row of fine old filbert-trees in the garden; a bank near these trees was a great summer haunt of these pests, and was tunnelled in every direction with their burrows: the gardener, who kept a gun ready loaded for the purpose, was in the habit of shooting them as they sat perched on the boughs of the filbert-trees.—*John Cordeaux; Great Cotes, Ulceby, Lincolnshire, April 5, 1866.*

[See also 'Letters of Rusticus,' p. 119, where is given a rather detailed account of a rat's climbing when pursued by a weasel, which at last killed it.—*E. Newman.*]

*Habits of the Shorttailed Petrel (Nectris brevicaudus).**

THIS bird is an inhabitant of the seas surrounding Tasmania and the islands in Bass's Straits, to some of which, but especially the Green Island, it resorts during the summer in countless numbers, for the purpose of breeding and rearing its young. I visited this island in January, 1839, when, although the season was far advanced, both eggs and young were still so numerous as to excite my astonishment. I had previously heard much of this great nursery of petrels, and might have added much to the length of this paper by recording my own observations; but so much has been written by others that I prefer giving their statements, notwithstanding a little repetition in the details comprised therein. Mr. Davies, in the second volume of the 'Tasmanian Journal,' states that "About the commencement of September these birds congregate in immense flocks, and shortly afterwards proceed at sunset to the different isles upon which they have established their rookeries. Here they remain during the night for the space of about ten days, forming their burrows and preparing for the ensuing laying season. They then leave, and continue at sea for about five weeks.

About the 20th of November, at sunset, a few come in to lay, and gradually increase in numbers until the night of the 24th. Still there are comparatively few, and a person would find some difficulty in collecting two dozen eggs on the morning of that day.

It is not in my power to describe the scene that presents itself at Green Island on the night of the 24th of November. A few minutes before sunset flocks are seen making for the island from every quarter, and that with a rapidity hardly conceivable; where they congregate together, so dense is the cloud, that night is ushered in full ten minutes before the usual time. The birds continue flitting about the island for nearly an hour, and then settle upon it. The whole island is burrowed, and when I state that there are not sufficient burrows for one-fourth of the birds to lay in, the scene of noise and confusion that ensues may be imagined. I will not attempt to describe it. On the morning of the 25th the male birds take their departure, returning again in the evening, and so they continue to do until the end of the season.

* * * Every burrow on the island contains, according to its size,

* Extracted from Gould's 'Handbook of the Birds of Australia,' vol. ii. p. 464; and previously printed in the 'Ibis' for 1859, p. 397.

from one to three or four birds, and as many eggs; *one* is the general rule. At least three-fourths of the birds lay under the bushes, and the eggs are so numerous that great care must be taken to avoid treading upon them. The natives from Flinders generally live for some days on Green Island, at this time of the year, for the purpose of collecting the eggs, and again in March or April for rearing the young birds. * * * Besides Green Island, the principal rookeries of these birds are situated between Flinders Island and Cape Barren, and most of the smaller islands in Furneaux's group. The eggs and cured birds form a great portion of the food of sealers, and, together with the feathers, constitute the principal articles of their traffic. The mode by which the feathers are obtained has been described to me as follows:—

“The birds cannot rise from the ground, but must first go into the water, in effecting which they make numerous tracks in the beach similar to those of a kangaroo; these are stopped before morning, with the exception of one leading over a shelving bank, at the bottom of which is dug a pit in the sand; the birds finding all avenues closed but this, follow each other in such numbers that, as they fall into the pit, they are immediately smothered by those succeeding them. It takes the feathers of forty birds to weigh a pound; consequently sixteen hundred must be sacrificed to make a feather bed of forty pounds weight. Notwithstanding the enormous annual destruction of these birds, I did not, during the five years that I was in the habit of visiting the Straits, perceive any sensible diminution in their number. The young birds leave the rookeries about the latter end of April, and form one scattered flock in Bass's Straits. I have actually sailed through them from Flinder's Island to the heads of the Tamar, a distance of eighty miles. They shortly afterwards separate into dense flocks, and finally leave the coast. The old birds are very oily, but the young are literally one mass of fat, which has a tallowy appearance, and hence I presume the name of ‘mutton bird.’ To this I may add that the young birds are very good when fresh, and the old birds after being skinned and preserved in lime are excellent eating. It will be seen that I have alluded in forcible terms to the great abundance of this species, in confirmation of which I annex the following extract from Flinder's Voyage, vol. i. p. 170:—

“A large flock of gannets was observed at daylight, and they were followed by such a number of the sooty petrels as we had never seen equalled. There was a stream of from fifty to eighty yards in depth,

and of three hundred yards or more in breadth; the birds were not scattered, but were flying as compactly as a free movement of their wings seemed to allow; and during a full *hour and a half* this stream of petrels continued to pass without interruption at a rate little inferior to the swiftness of the pigeon. On the lowest computation I think the number could not have been less than a hundred millions. Taking the stream to have been fifty yards deep by three hundred in width, and that it moved at the rate of thirty miles an hour, and allowing nine cubic yards of space to each bird, the number would amount to 151,500,000. The burrows required to lodge this quantity of birds would be 75,750,000; and allowing a square yard to each burrow, they would cover something more than $18\frac{1}{2}$ geographic square miles of ground.'"

* * * * *

"The little settlement on Vansittart's or Guncarriage Island, one of the Flinder's Islands group in Bass's Straits, lies in a cove on one side sandy, but on the other closed in by huge granite rocks, behind which the sealers have built their houses, and which serve also to shelter their boats from the sea. Tucker's (the chief settler's) house was comfortable enough. His wife was a Hindoo woman from Calcutta, active and industrious, who kept it in good order. The other men had native wives or 'gins,' as they called them, from Australia and Van Diemen's Land.

"Their original occupation was sealing, for these islands formerly swarmed with seals. In the course of time these animals became exterminated, and now their principal livelihood is derived from the mutton birds, which are found here in incredible numbers. These birds, called also sooty or shorttailed petrels (*Puffinus brevicaudus*, Gould, B. Austr. vii. pl. 56), have such long wings that, like the albatross, the largest of their tribe, they have great difficulty in rising from the ground when settled; and it is this peculiarity that makes their capture so easy. They build in holes in the ground. The islands which they frequent are burrowed over in all directions, just like a rabbit-warren. They arrive in huge flocks about the 21st of September, generally to the day, to prepare their holes and clean them out. There is tremendous fighting and quarrelling for these holes. When the birds have arrived a few days their tracks or pathways begin to be apparent, or, as the sealers say, 'they begin to show their runs,' for they go down to the sea every morning. The sealers then dig a large pit in one of the main runs, with small fences on each side leading down to it, like a funnel. When all is ready, some morning at day-

break, when the birds come out of their holes, they are driven down these runs into the pitfall. 'We rushes 'em down, sir, and they tumbles one over another into the hole,' was the way the men expressed it. They crowd down and fall in by hundreds, crushing and smothering each other until the pit is full, when the men break down the fence at the sides and let the rest escape. They generally take 2000 or 2200 in each drive. The men then jump into the hole and set to work to pick them, pulling off the body-feathers, and stuffing them into bags, and throwing the carcasses out of the hole. This lasts till noon. It is hard work, and before the end of the season their nails sometimes come off, from the continual plucking. It takes the feathers of twenty-five birds to make a pound, which sells at Launceston for twopence; but Tucker, his wife, and his pal Dick, collected a ton of feathers last year. To do this they must have killed 56,000 birds, and yet they say their numbers do not seem to decrease. The birds come back to the islands again on the 23rd of November to lay. They lay but one egg, and generally on the day or the day after they arrive: the sealers collect a good many for their use; and when the young birds are nearly full grown, they attack them again for the sake of the oil with which the old birds feed them. They thrust their hands into the hole and pull out the young bird by the head, kill it by squeezing it, and, holding it up by the legs, the oil runs out at the beak. This oil is very clean and pure, burns well and sells at Launceston at four shillings per gallon. When the young birds are full grown they are very fat. The men then pull them out of their holes, spit them and sell them. It is rather dangerous work catching them in this way, for many venomous snakes dwell in the holes, and are sometimes seized and pulled out instead of a bird."

Ornithological Notes from Shetland. By H. L. SAXBY, M.D.

(Continued from S. S. 67).

NOVEMBER AND DECEMBER, 1865.

- November 1. Wind N. A robin appeared in the garden.
 " 2. " N. A small flock of fieldfares arrived.
 " 3. " N. (frost). Flocks of twites increasing in size.
 " 5. " N. (frost). Marked decrease in the number of
 golden plovers.

November 6. Wind N. A male blackcap warbler in the garden.

„ 8. „ N. A female moorhen shot (the only one seen this winter).

„ 11. „ N.W. Most of the redwings and greenfinches left.

„ 15. „ S.W. A coot shot (the only one seen this winter).

Siskin.—The two siskins mentioned in my last communication (S. S. 66) were both males. After shooting them I managed to obtain some very close views of the remainder of the flock. Some individuals were rather brilliantly tinged with yellow and deeply marked with black, but others had scarcely any yellow, and as far as could be ascertained were without black upon the head. They all kept mostly to the outer branches of the trees, evidently preferring the sycamores, but for what reason I knew not until I discovered that their food consisted entirely of the Aphides which so infest that species. The whole flock was almost constantly in motion, and so eagerly did they pursue their employment that it was difficult to confine my observations to any one member of it for more than half a minute at a time. Their mode of conducting their search for food instantly called to mind the once familiar blue titmouse—a bird which I have scarcely even seen during the last ten years. Like it they seemed fond of swinging head downwards from a leaf stalk or a slender twig. Having vainly searched Macgillivray, Morris and Yarrell for a full description of the siskin in winter plumage, I venture to offer one taken from my own specimens.

| | | | | | |
|-------------------------------|---|---|---|---|-------------------------|
| Whole length | - | - | - | - | 4 $\frac{2}{3}$ inches. |
| Wing from carpal joint to tip | - | - | - | - | 2 $\frac{3}{4}$ „ |
| Bill from front to tip | - | - | - | - | $\frac{5}{12}$ „ |
| Tarsus | - | - | - | - | $\frac{7}{12}$ „ |
| Middle toe and its claw | - | - | - | - | $\frac{7}{12}$ „ |

Sex male.

Bill dull lead, darkest at the point; under mandible paler than the upper one. *Iris* dark brown.

Head and Upper Surface.—Lore, crown and forehead shining black, most of the feathers very narrowly edged with pale greenish gray; the black upon the crown separated from the eye by a narrow streak of dull yellow; sides of the head and nape of the neck yellow mottled with dusky gray, but in the latter situation the yellow is fainter;

scapulars and upper half of the back dull olive-green, the central line of each feather stained with dusky gray; lower half of the back, including the upper tail-coverts, yellow, the central line of most of the feathers also stained with dusky gray.

Tail feathers black, the tips and outer webs narrowly, and the inner webs broadly, edged with pale yellow; the central pair of feathers have least yellow, and the shafts of all are black.

Wings.—Third quill very little shorter than the first and second, which are equal and the longest in the wing; coverts of the primaries black; those of the secondaries and tertials greenish yellow at the tip, black at the base, the two colours forming a double bar across the wing; lesser coverts similar in colour, but the black bases are nearly concealed; in the first three primaries the outer web of each is narrowly edged with greenish yellow quite to the tip, the inner web broadly edged with white nearly to the tip; secondaries, tertials and remaining primaries similar in colour to the first three primaries, but with the addition of a yellowish white patch near the base of the outer web; all of the quills have black shafts.

Under Surface.—Throat, front of neck and upper part of the breast yellow, the concealed portion of the feathers lead-gray; the yellow gradually fades into white towards the lower part of the breast; abdomen white; sides and under tail-coverts white, with some scattered stains of yellow and a few large streaks of black.

Tarsi, feet and claws light reddish brown.

The second specimen, also a male, was far less brightly coloured, but the measurements were the same as those given above.

Little Auk.—On the 15th of December, during an extremely heavy westerly gale, a living specimen of the little auk was picked up on the hill of Vallafiel, among the heather. It was a male and in very good condition, but the stomach was quite empty.

JANUARY AND FEBRUARY, 1866.

Glaucous Gull.—I am not sure when the glaucous gulls arrived, but the adults seem to have remained with us for even a shorter time than usual this winter. A very fine immature male, which had just been caught upon a cod-hook baited with a piece of fish-liver and thrown out for the purpose, was brought to me on the 10th of January.

Shag and Longtailed Duck.—The flocks of shags reached their full size about the middle of January, after which time they began to

diminish rapidly. They have not visited the bays and voes in their usual number this winter, in consequence of the great scarcity of sillocks, but their absence has resulted in almost an abundance of longtailed ducks (Zool. 9127, 9519).

Snow Bunting.—The number of snow buntings is nearly always far less in mid-winter than in spring and autumn. This season, however, the almost entire absence of frost and snow, and the consequent openness of the ground, have caused many very large flocks to remain.

Golden Plover.—The same cause has also, in a great measure, induced the golden plovers to remain longer than usual upon the hills, instead of following their habit of visiting the shore at this season. They are now in fine condition for the table, and are quite free from the rank fishy taste which they invariably acquire after feeding, even for a few days, upon the beach.

Herring Gull.—Not the least among the evil results of a scarcity of fish, is the damage done to the turnips by the herring gulls. In a large field in this neighbourhood the crop is most seriously injured, for although, at first sight, the rows look well enough, nearly one half of the roots have been scooped quite hollow. The birds seem to dislike the outer portion, interfering with it as little as possible, and only removing enough to enable them to reach the softer parts within. Sometimes a gull may be seen with its head completely hidden, but, as if conscious of its danger, constantly withdrawing it and looking around to prevent a surprise.

Goldeneye.—On the 1st of February I visited the fresh-water loch at Belmont, where one seldom fails to meet with goldeneyes at the proper season. There were numerous small flocks, besides many scattered individuals, upon various parts of the loch, and as I watched them from my concealment behind a ruined wall, I had abundant evidence that some were already pairing. Their movements were precisely similar to those of the common wild duck. The males occasionally uttered a peculiar, gentle, rather shrill cry. I shot a splendid adult male.

Shag.—Shags are already assuming their breeding plumage. I first observed the change on the 1st of February.

Hen Harrier.—A fine hen harrier visited Baltasound about the beginning of February. Several times when I was without a gun it flew close past me.

Woodcock.—On the 4th of February, after a succession of gales from

S.W., I observed several woodcocks upon the stony hill above Colvidale, where they still remain. The people tell me that a winter seldom passes without a few of these birds being seen there.

Black Guillemot.—On the 6th of February I first saw black feathers appearing upon the breast of a last year's bird.

Sky Lark.—The song of the sky lark was first heard on the 18th of February—the first fine day this year.

HENRY L. SAXBY.

Baltasound, Shetland, February 28, 1866.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from Zool. S. S. 132.)

MARCH, 1866.

Tits.—Five species of these lively little birds are common to North Lincolnshire, namely, the great, blue, cole, marsh and longtailed tit: of these the marsh tit is decidedly the rarest. It is occasionally met with in our larch plantations, in company with the blue and cole tits and goldencrested wrens. All the tits, with the exception of the marsh, remain with us during the year. I am not aware that the marsh tit nests in this neighbourhood.

Rook.—Rooks commenced building the first week in March; they are particularly partial to the use of the long slender twigs of the birch, and in this county, where building materials are somewhat scarce, will do considerable damage to these trees by breaking off the twigs, completely spoiling the beauty of the tree, and giving it a cropped appearance. They invariably line their nests with wool, short straws, and dried bunches of grass, pulled up during the winter by these industrious foragers when searching for grubs, now again to become useful as a lining for their nests. So much has from time to time been written about these birds that it would be difficult to mention any new fact concerning their habits. In this treeless land they frequently build on willows, and I know of several instances of these trees having been used for this purpose for many years: there is one now near my house containing eight nests, and in our marsh district I lately observed a pair of these birds building on the boughs of a low willow, almost overhanging a public footpath.

Knot.—There have been some large flocks of knots on the flats during the month, as well as a considerable increase in the number of wild fowl visiting the Humber. On the 16th of March I observed knots, dunlins, ringed dotterells, curlews, bartailed godwits, gray plovers and blackheaded gulls feeding on the fore-shore, and a large flock of widgeons on the water. With a good telescope there is no difficulty in making out the various species of birds on the flats, and on a clear day the least variations in plumage are distinguishable. When knots and dunlins are feeding together the knots may be known, not only by their size, but also by the grayer tint of the plumage: at this season the under parts of dunlins look pure white, while in knots the same parts are gray. Knots keep much closer together when feeding than dunlins, the latter birds rambling wildly about, constantly crossing and recrossing each other's tracks, while knots generally feed going straight forward, and not far from the edge of the water, their heads being all turned in the same direction. While lately watching a large flock of these birds feeding on the fore-shore I observed one which, instead of running after the manner of its kind, got over the ground by hopping; the other leg was drawn up, and the foot hung dangling by the skin, probably having been cut through by a single shot; the poor bird had a very singular appearance thus hopping along-like a great thrush; in other respects it did not appear to suffer from the mutilation, as it kept constantly plunging its bill into the soft "warp," all the time, after its own fashion, keeping well up with its companions. When knots are feeding they walk with the legs very much bent and the head thrust forward, after the manner of a waterhen, giving them somewhat of a squat appearance. In the illustration of this bird, as given in Morris's 'Ornithology,' the attitude is admirably true to nature. Gray plovers walk with the legs nearly erect, and the body carried horizontally; the head is drawn in, giving the bird a somewhat dumpy and thick-necked appearance. When feeding they walk slowly forward for a few paces, rapidly stoop and pick up some object from the mud, without, however, thrusting their bill into the ooze; then for a time remain perfectly motionless, as if watching to see whether they are observed, their wonderfully sharp eyes looking like a large bright black bead; then they move slowly forward again for a few paces and repeat the process. They have none of that bustling activity so characteristic of knots and dunlins, and are at all times a shy, wild, and suspicious bird.

Bartailed Godwit.—Several bartailed godwits on the fore-shore

during the last fortnight. These birds bore deep for their food, after the manner of curlew and whimbrel, plunging their bill into the soft ooze up to the forehead. I have never shot the black-tailed species on the flats, although it probably occasionally visits the Humber during the period of the spring and autumn migrations. Two years since, in May, while watching through a telescope a small flock of godwits, I observed amongst them one the whole of whose under parts, except the belly, were a dark chestnut colour.

Blackheaded Gulls.—Have seen several of these gulls about the marsh district during the last winter. As far as my observations go, they appear to be the first of our shore birds which assume the distinctive summer dress: during the last week in February I observed one which had then nearly acquired the brown summer head-dress.

Pied Wagtails.—There was a considerable accession to the number of pied wagtails in this neighbourhood on or about the 28th of this month.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
March 31, 1866.

Ornithological Notes from the Isle of Wight.

By Captain HENRY HADFIELD.

(Continued from S. S. 178).

MARCH, 1866.

Spotted Woodpecker, &c.—I have lately heard of a spotted woodpecker (*Picus major*) having been met with in the island fifty years ago. My informant, Mr. J. Nobbs, a gunmaker, of Newport (well known to me), in replying to my queries, says, "On the 2nd of May, 1815, wandering over St. George's Down, towards Rowlands, I seated myself under a lofty tree: the hawthorn was blooming, and I had begun to muse on the beauties of the scene, when presently a tapping sound was heard, and on looking up I observed, some fifteen yards away, a spotted woodpecker settled on the trunk of an old but stunted tree. The tapping would cease for a time, when the bird with head erect watchfully sat poised on its out-spread tail, then, resuming its spiral ascent, would expertly extract from the decaying bark its insect food." This woodpecker, as well as those previously referred to, were found

in East Medina ; but I have lately heard of instances of their occurrence in West Medina. Mr. Robert Gibbs, a gentleman residing in the latter division, informs me that a woodpecker was shot at Yarmouth by a man named Udal, many years ago ; and John Pedder, who I have known for years, tells me that when gamekeeper on the Gatcombe and Swainston estates, he shot some spotted woodpeckers. From the description given, as to size, &c., they must have been of the greater spotted species. One was stuffed, but he does not know what became of it. The first was killed at Gatcombe, the next near Newtown, and a third somewhere in the neighbourhood of Yarmouth.

John Pedder tells me (and his statement is confirmed by Mr. Nobbs, who witnessed it) that the pheasants bred and reared by him would, months after being turned out, leave the cover on hearing his whistle, and flock around him and on him, perching on his arms and shoulders to be fed ; but the appearance of a stranger would scare them all back to the woods. Two or three hundred pheasants together and on the wing must have been a grand sight, and people came to the Lodge to witness it.

Mr. Nobbs has had a cockatoo (*Psittacus brachyurus-albus*) for thirty-eight years, and it was said to be about two years old when given to him. I remember seeing it thirty-three years ago ; but, notwithstanding its great age, it is apparently as well and lively as ever. Mr. Gibbs tells me that he shot a pied flycatcher some years ago at Thorley Farm, near Yarmouth. This is a rare visitant, not having been met with but once or twice before, and that in the same neighbourhood ; he also informs me that he killed two hawfinches at Bowcombe last year, and a hoopoe two years before. Three other hoopoes had been previously shot by him on Thorley Farm : he mentions having once killed, on Cridmore Moor, near Rookley, two spotted crakes.

Bluethroated Warbler.—March 6th. A pair, I believe, of these rare birds was seen to-day by the brook-side, though, getting but a momentary view of one, I could not be quite sure ; however, I shall watch them closely this season, and endeavour to ascertain whether they breed with us or not.

Stonechat.—March 11th. Is paired, but it is difficult to ascertain the exact time of pairing of this and many other species, and there is reason to believe (as I have already stated) that the raven, for instance, remains paired all the year round. That the hedgesparrow does, I have long thought, having observed a pair about my garden-hedge for

years, and one of the birds was referred to (Zool. 5204) as being afflicted with tubercular excrescences. That both pigeon and dove form a permanent alliance I have little doubt, and there is reason to believe that the swallow and martin pair for life. I would suggest to those who have aviaries of our native birds on a large scale, that they direct their attention to the matter, and observe closely the habits of the different species in this respect; not that their doings in captivity, where their choice must necessarily be more or less restricted, can be altogether relied on, still it might tend to throw light on a subject at present but little understood.

Redthroated Diver.—Though unable to fix the time of their departure to a day, I may safely say that the greater part had left our coast by the end of February, but I have heard of a few being seen as late as the first week in March in Sandown Bay, their usual haunt. And the large flock of ducks (*Anas boschas*) that frequented the bay, must have taken their departure about the same period, without having their ranks thinned. A more wary flock I never saw; there was no getting within half a mile of it.

Black Scoter.—March 20th. Three were observed off Shanklin.

Tillark.—March 22nd. I believe the species is nesting, having seen one to-day carrying material.

Rook.—March 26th. Our rooks are now busily engaged repairing the nests, which have been greatly damaged by the late gales: the work was suspended on the setting in of the frost in the middle of February. As usual, they are robbing their neighbours right and left when opportunity offers, but if detected there is a momentary clamour, and not unfrequently a fight. They are unusually late in breeding, but the weather has been unseasonably cold as well as stormy; thermometer ranging from 32° to 45° throughout the greater part of the month.

Chiffchaff.—March 26th. This, the smallest and perhaps the earliest of our migratory birds, has just made its appearance, two having been observed to-day sporting among the upper branches of the flowering but leafless elms at Bonchurch, where the chiffchaff was first seen last year on the 27th of March. Thermometer 48°; wind south-west.

Wheatear.—March 27th. Found two to-day in the newly-ploughed lands bordering the sea-cliffs, between Shanklin and Sandown. This species and the chiffchaff arrive so nearly together that I am as yet unable to decide which comes first.

Sky Lark.—March 27th. Still gregarious, but a pair or two were

observed—the male with crest erect, but not soaring, nor have I heard its song.

Song Thrush, &c.—A nest found early in the month containing three eggs. A pair of blackbirds are again building in the ivy high up on the house, the female as usual doing all the work: though raining heavily at the time, she was in and out of the nest every three or four minutes, but generally alighting on the verandah for a second before flying up to the nest.

In reply to the editorial note (S. S. 174), I beg to say that though unable, in every instance to give the particulars, all that can be relied on is detailed with scrupulous accuracy, and the names of my informants given when I have permission to do so. Mr. Nobbs's account is circumstantial enough, and is given almost verbatim.

HENRY HADFIELD.

Ventnor, Isle of Wight,
April 2, 1866.

The Migratory and Wandering Birds of the County Dublin, with the Times of their Arrivals and Departures, as far as the Grallatores. By HARRY BLAKE-KNOX, Esq.

As you invited me to send you an account of the summer migrants to this county, I waited till the end of last year (1865), that I might be enabled to give the general time of the arrivals and departures of the migrants for the last five years, and though I am not strictly keeping within bounds in thus giving a list of all the migrants, both winter and summer, to this county, still I hope that the subject may be an excuse for taking up the pages of the 'Zoologist' by what may appear to be only a local list—things I have a great antipathy to, unless the local lists of a country, or a large section of a country, be united into a table; they are then of great advantage, as showing the distribution of species, but merely as local lists they are seldom read. Another point, too nice for my experience of migratory birds, is giving the exact date on which a species arrives or departs: true, the bird may first have been noticed on that date, or that average date, by that particular person, but another may have seen it before. I therefore avoid being dogmatical as to a date, and divide the month into three sections—first, middle and end, of ten days each; I never found the latitude too much or too little, the bird generally arriving within the

ten days, and as often on the late as the early side of the middle of the section.

Golden Eagle.—Has occurred; was, no doubt, formerly a resident.

Whitetailed Eagle.—Once a resident, but now only very occasional. In two instances only have I seen it in this county within the last six years. Its former breeding-station was the Island of Lambay.

Osprey.—Rare.

Peregrine Falcon.—I can scarcely call this falcon a resident. A pair, I am informed, bred at Howth last year, and a pair, some years ago, used to breed at Lambay. In former times Howth, Lambay and Ireland's Eye possessed many eyries of this bird. Stragglers occur occasionally. Five times I could have killed a noble peregrine which frequented Dalkey Island for about a week: the bird being my crest, and I an Irishman, its life of course was sacred.

Merlin.—Resident in the mountainous and boggy parts; soon, like the poor peregrine, will be exterminated by gamekeepers, &c. To be met with pretty often during winter in the snipe bogs. Often has a merlin accompanied me whilst shooting in a snipe bog, and I assure you his depredations are not great; I never saw one strike a snipe on the ground, but if flushed and missed by the shooter, the hawk would give chase, or if shot, before reaching the ground, if the bird could seize it, he invariably carried it off; but if it touched the ground before the merlin caught it, it was quite safe. When the hawk would leave the bog, so might I—all the snipe were flushed. Many an incredulous look has been given me on telling an incident like this, but those who doubt me let them not kill a hawk the moment he is within range, or look deadly at him, for the human eye can terrify most things, and very probably a merlin may sometimes act the pointer for them, and cause wild snipe to lie closer for their dogs. I have heard of many instances of hawks acting as above.

Marsh Harrier.—An occasional autumn and winter visitor. In 1860 I saw one in company with a flock of pomarine skuas; at first I took it for the common skua, but the long tail and white crown of head at once indicated what it was. It was some miles at sea.

Hen Harrier.—Rare. Has been obtained at all seasons.

Shorteared Owl.—A regular, though not a common, winter visitant to the bog, and other suitable localities. Old males are often cream-colour, instead of tawny. Arrives from the beginning of October.

Snowy Owl.—Has occurred.

Great Gray Shrike.—Very rare.

Spotted Flycatcher.—A regular summer visitor. Very local. No dates?

Missel Thrush.—Resident. I am sure it migrates more than partially, from the great addition to its numbers in winter.

Fieldfare.—Only visits my part of the county in very hard weather. Arrives the latest of its family, and leaves in March.

Redwing.—A very abundant winter visitor. Arrives in the beginning of October, and departs late in March. In my note-book I find:—February 15th, 1862. "It is generally imagined that the redwing never sings in Ireland; I shot one in the act to-day." That its song is rare in this county there is very little doubt, as I pay too much attention to my "feathered friends" not to know it if the redwing did often sing. I hope readers will not ask me if I know the redwing from the thrush, as others have been questioned; let it be sufficient for me to say I do.

Ring Ouzel.—A summer visitor to suitable localities. The Hill of Howth is a very favourite spot. No dates?

Robin Redbreast.—Resident. Numbers greatly augmented in spring. That these birds migrate from north to south I feel confident; those in the southern countries crossing to the continent, and their place filled in winter by more northern birds. That a great impulse of nature causes this total and partial migration there can be little doubt. It is not an unfounded supposition of mine either, for the bird is abundant in summer, not near so plentiful in winter, not very numerous (adults) in autumn, and swarming everywhere in spring, as they pass gradually northward; again, it is much scarcer in the northern than the southern counties in winter. That it migrates there is no doubt; so many examples have been taken at sea and far from land. (For additional notes see Zool. 8947).

Redstart.—Rare. Has occurred twice to myself in winter, both females, and twice in summer, both males.

Black Redstart.—To my own knowledge this bird visits favourite localities every second year, in limited numbers. From November to end of January. (See Zool. 8034, 8445, 9433).

Stonechat.—Resident. Numbers augmented in autumn: many winter with us. There is a partial migration in June, from which time till October the bird is scarce. Same remarks as to the redbreast. This is the "furzechat" of Ireland.

Whinchat.—A summer visitant. Local. Arrives about the second week in April; leaves in October.

Wheatear.—A summer visitor from the end of March till the middle of October. Once seen in November. I was inclined to think that the wheatear might winter in some parts of Ireland, but I never found it later than November, even in the west, where it is a most abundant species. Its arrival is the first token of coming spring among the summer migrants, it often appearing at the time the snow bunting visits us on its vernal migration northwards. "Wheatear" is a most absurd name for this bird in Ireland, as it frequents the wildest, most barren and rocky districts it can find. Its Irish name of "stonechat" is very appropriate. The real stonechat never frequents stones at all, but always hedges and furze.

Grasshopper Warbler.—A summer visitor. Local and little known.

Sedge Warbler.—Summer visitor, from the middle of April till the middle of September. Local, but pretty well known.

Blackcap.—Both a summer and winter visitor, in very small numbers. Thompson, in his 'Natural History of Ireland,' mentions the following instances of its occurrence in the County Dublin:—A male shot early in October, 1833. May, 1844, a pair were seen in the under-wood of the Zoological Gardens, Phoenix Park, where, in a previous year, one had been seen. It has also occurred other years in the Phoenix Park. Two shot in December, 1843 (one on the 23rd) at Raheny. October, 1846, at Donnybrook. Last week of January, 1847, at Rathfarnham. It has occurred in various parts of Ireland during the winter. Has only once come under my own observation, and that a female, shot in December, 1860.

Whitethroat.—An abundant summer species from the end of April to the end of September.

Willow Wren.—Common summer visitant, from the first week of April till the end of October.

Chiffchaff.—A summer visitor. Not uncommon, though very secluded. From the beginning of April till ——?

Golden Crested Regulus.—Great additions swell the numbers of this resident in December. For a few weeks they are plentiful in the hedges most winters, but in the pine-copses their tinkling note is always to be heard.

Blue Tit.—Resident. Numbers increase during the autumn and spring.

Cole Tit.—Resident. Great additions in autumn and spring to the fir-woods, which are its chief haunts.

Marsh Tit.—Very rare.

Pied Wagtail.—Resident. More plentiful in winter. There is a great autumnal migration from Ireland. The greatest numbers may be seen in the spring and autumn. Same remarks as redbreast.

White Wagtail.—Is, I am sure, more plentiful than believed. That it is mistaken in many cases for the pied, there can be little doubt, the two species are so closely similar in their winter dress.

Gray Wagtail.—More plentiful in winter than in summer. Often very abundant in spring.

Yellow Wagtail.—Rare; occurred twice to myself in the summer of 1860.

Meadow Pipit.—Resident. Immense flocks in autumn may regularly be seen crossing the channel from the east till as late as December.

Rock Pipit.—Resident. More abundant in winter.

Sky Lark.—Resident. Immense flocks come in winter and autumn from the eastward. The sea-shore at times is covered with their dead bodies: these are called "Scotch" and "Welsh" larks, but their flight must have been more protracted to cause so strong a bird to succumb and die.

Crested Lark.—Once.

Snow Bunting.—Autumnal and vernal migrants. Sometimes, and to favoured localities, a winter resident.

Common Bunting.—Common in summer. I never met it in the winter in this county, though Thompson calls it "permanently resident" in Ireland. "Common" is an untruthful name for it, for the yellow bunting is in all places more common. It is the "meadow bunting," certainly, of Dalkey, for it always builds beneath a high weed in a meadow of standing grass. It occurs here (Dalkey) from the middle of April till the end of October.

Yellow Bunting.—Resident. Great flocks visit this county in hard weather in winter.

Girl Bunting.—Has occurred in some instances; and perhaps not so rare as believed. One shot by myself in 1861.

Blackheaded Bunting.—Common in Ireland, and resident. I know little of it in this county, except seeing it occasionally. In May it is the sparrow of the road-side, and may be seen in numbers at every change of posters along the roads in winter.

Chaffinch.—Resident. Both male and female. In November and December I have seen vast flocks of females on old potato-grounds.

I do not think our residents separate the sexes in winter, as both may be seen all the year round: certainly males may be oftener seen in the spring, but then their loud note and conspicuous perch make them plainly visible. I can give no reason why we see these large flocks of female chaffinches in the autumn and early winter.

Greenfinch.—Resident. More plentiful in summer and autumn than in winter.

Mountain Finch.—A not plentiful or regular winter visitor. This bird breeds in Ireland.

Hawfinch.—Same remarks, but does not breed.

Siskin.—Same remarks. Breeds in suitable localities in Ireland occasionally.

Lesser Redpole.—Resident. Enormous flocks visit favoured localities in winter. Arrival uncertain, departure end of March.

Mealy Redpole.—If the bird I forward you for inspection is the mealy redpole, it breeds sometimes in Ireland, and is not very rare in winter. Being anxious to know the species, I wrote to Mr. Gardner, of Holborn, taxidermist, for a skin of the mealy redpole, a year ago, which on arriving I considered *Fringilla linaria* in winter dress. I returned the bird as *F. linaria*, and not *F. borealis*, and received a reply that Mr. Frederick Bond had authenticated it as *F. borealis*; however, Mr. Gardner did not send the bird again. The specimen now before you is twenty degrees more "mealy" than that sent by Mr. Gardner, and was shot (cruelly if you will) whilst feeding its young, by myself on account of its mealy look. The three young I sent to Mr. T. Cullen, sub-curator of the College, &c., Dublin, to preserve, but I think he failed in doing them, though he has two, I think, in spirits; they were from the nest for some days. The other two and the female I would not kill. I will never consider the mealy redpole as distinct from the common other than as a very old bird, or a northern or permanent variety. A very old male linnet is far more distinct from a middle-aged bird than the two redpoles; in fact, I have seen linnets so intensely crimson on the breast and head, and mealy above, that I even pardoned some for believing them the "greater redpole." [I think the bird a large specimen of the lesser redpole.—*E. N.*]

Twite.—Resident; great additions in hard weather.

Crossbill.—Has occurred in autumn. I never met with it.

Waxwing.—Has occurred.

Starling.—Common in winter. It breeds in very limited numbers.

I do not know of its breeding in the city, though it may do so in a few cases, whereas in favoured England it is a common city bird. Three old elms at Ballybrook induce a few pairs to breed there. Great numbers arrive in November and December, and leave again towards the end of March. In June, 1864, very large flocks passed over this county from the east (see my note, Zool. 9211).

Rosecoloured Pastor.—Has, in a few instances, occurred in the summer months.

Chough.—A common Irish bird and resident, though of late years rather scarce in the County Dublin.

Raven.—I never met with the raven breeding in this county, though every winter I see a few.

Currier Crow.—Said to have been seen in this county. I have seen solitary birds like rooks flying from the mainland to Howth, a distance of five miles across the water; these were not gray crows, and may have been the real *Corvus corone*. Any so-called Irish examples I have seen were young rooks, that bird retaining the feathers on the bill from April till April—a year. If to be found at all in Ireland is very rare.

Hooded Crow.—Resident. Far more numerous some winters than others.

Jay.—Very occasional.

Great Spotted Woodpecker.—Thompson mentions one shot on the banks of the canal near the city in 1831: another was with it.

Hoopoe.—Very rare.

Cuckoo.—Arrives at the end of April. The young are seen later than the adults, and remain till the middle of October: the old bird is rarely seen after the beginning of July.

Kingfisher.—Resident in small numbers. To be met with in threes or fours along the rocky coast during winter, but not in spring. A pair or two annually wintered at Dalkey, till, in 1864, they were either killed or scared from the shore, for every gun and pistol in the neighbourhood banged and popped at them that winter.

Swallow.—Summer visitor from the end of April till the end of October. May be seen sometimes in November and December.

House Martin.—Summer visitor from the end of April till the middle of October. Seen in November.

Sand Martin.—Summer visitor from first week in April till beginning of October.

Purple Martin.—Once obtained in Ireland, and that at Kingstown.

Swift.—Summer visitor from the first week of May in the country, from the end of April in the city, till towards the end of August. Why the swift always visits the town first I do not know, except the the chimneys warm the air and thus acclimatize the bird for a week or two, as it is very susceptible to cold. Often a fortnight in the city before it comes to Dalkey, a distance of seven miles. Before migrating it hawks till half-past ten, when nearly quite dark: at such times I have caught them in an insect-net.

Whitebellied Swift.—One shot at Rathfarnham on the 14th of March, 1833, now in the Dublin Society's Museum.

Nightjar.—A rare summer visitor to suitable localities.

Turtle Dove.—Same remarks.

Quail.—Resident. Many arrive in spring.

The following non-migrating birds constitute a complete list of the land birds of the County Dublin:—kestrel, sparrowhawk, longeared owl, barn owl, dipper, thrush, blackbird, hedge accenter, great tit, longtailed tit, sparrow, goldfinch, linnet, bullfinch, rook, jackdaw, magpie, creeper, wren, ring dove, rock dove, pheasant, partridge and red grouse. Ninety-eight species of land birds

H. BLAKE-KNOX.

(To be continued.)

Ornithological Notes from Penzance.—I have nothing very interesting to communicate to you on the vernal Ornithology of this district. I never remember so backward a spring, nor do I ever remember the ground so saturated with rain. I saw the first swallow this morning, but they have appeared for some days in the eastern part of the county, so my nephew writes me word. The blackbird commenced his song on the 26th of March, and the chiffchaff on the 30th. Two hoopoes have been captured, one at Scilly. On Friday last I received three specimens of the black tern in summer plumage, killed at a large pond near the Land's End.—*Edward Hearle Rodd; Penzance, April 16, 1866.*

Common Buzzard in Suffolk.—Two individuals of the common buzzard were observed in the vicinity of Worlingham, near Beccles, in February last; one of them was shot on the 22nd: on its dissection it proved to be an immature female. The other bird was not secured.—*T. E. Gunn; Norwich.*

Lanius excubitor, Strix passerina and Bombycilla garrula in Wiltshire.—A fine specimen of *Lanius excubitor* was killed in the immediate neighbourhood of Calne on the 22nd of December last: it was first seen in a thorn-bush close to the canal, and was shot in the act of giving vigorous battle to two wagtails: it is now in the collection of Colonel Ward, of Castle House, Calne. There is also in that gentleman's collection a fair specimen of *Strix passerina*, which was knocked down, about four years since, at

Draycot, in this county, but whose occurrence has, I think, never yet been recorded. Colonel Ward also saw in his garden, in February last, a Bohemian waxwing, which, fortunately for its own safety, timed its arrival on a Sunday, and so escaped the end it would otherwise have undoubtedly met at the hands of a collector of British birds.—*Alfred Charles Smith; Yatesbury Rectory, Calne, April 10, 1866.*

Ixos obscurus in England.—I have received the following note from Mr. G. O. Groom-Napier, of Clifton:—"Five or six years ago a friend of mine, Mr. C. Matthews, purchased at a Hastings poulterer's a stick of small birds; it was in the autumn. One of these birds was an uncommon species, he thought, and brought it to me for identification. I was much puzzled with it at first, but at last made it out from Bree, as *Ixos obscurus*."

I append Temminck's description of the genus *Ixos*:—"Beak shorter than the head, compressed, bent downwards from the base, the point curved and slightly notched, and having stiff bristles at the base of beak. Nostrils basal, lateral, ovoid, half closed by a naked membrane. Feet short and weak, with the tarsus shorter than the middle toe; the outside toes connected at the base; the claws short and slender. Wings short."

"This section is a new one in the Ornithology of Europe, several representatives of it exist in Africa and in the Islands of the Indian Archipelago, where the species of this genus are very numerous. Mr. Müller, a naturalist-travelling in India, has informed me that in Java the species are sedentary in their habits; some species inhabit mountainous districts, and one is found at an elevation of 8000 feet; others live in the plains, even in the neighbourhood of inhabited districts; their note somewhat resembles that of our chaffinch. They generally appear in pairs or in small flocks, but seldom in great numbers; they mostly frequent trees or shrubs bearing fruit or berries, which form almost their only food: they are often seen on the ground, looking after fallen berries, but they rarely pick up caterpillars or other insects; indeed they may almost be considered as entirely fructivorous."

Description of the species:—

Ixos obscurus, Temminck.

"Crown of the head, cheeks and throat dull brown; back of the neck, wing-coverts, back and rump dingy earth-brown; whole of the wing the same brown, but rather brighter; breast and flanks clear brown; middle of belly whitish brown; belly and vent dull white; tail uniform blackish brown; beak and feet black. Length eight inches: the sexes are alike.

"This new species rather resembles, in form and general appearance, the *Ixos plebeius* of Northern Africa, figured in the Atlas of Travels in Egypt by Rüppel; but the colours of the plumage differ sufficiently in these two species to prevent them being mistaken. Our species, although different in colour of plumage closely resembles the one figured in the coloured plates under the name of *Ixos Vaillantii*, or *Merle cul-jaune du lap* (Buffon, pl. enl. 317), which is the Brunoir of Le Vaillant (Vis. d'Afr. pl. 106, f. 1). It resembles also, in all its characters several other species of the same genus.

"Habitat. Found in Andalusia in tolerable numbers. Seen also probably in North Africa.

"Food and propagation unknown."—*Edward Newman.*

Redwinged Starling at Brighton.—A very handsome redwinged starling (*Agelaius phoeniceus*) was caught at Hove, on Wednesday, March 21, and brought alive to Mr. G. Swaysland, the eminent bird-presenter, of Queen's Road, Brighton, and by him transferred to his aviary, where I have twice had the pleasure of seeing the interesting captive. This rare bird is an adult male, in fine plumage and condition, with the beautiful red and orange colouring of the wing strongly defined. He pined and moped so much during the first two days after his capture that it was feared he would die: being treated, however, with great care and attention he revived, and has since become more reconciled to his new abode, and now cracks the canary-seed with great gusto. It is noticed by Swaysland that the bird makes a noise or "cheep" similar to that of the young of the ringed plover, that he scratches with his feet like a fowl, and is very partial to a bath, in which he frequently indulges. I saw him to-day soon after concluding his ablutions, and had ample opportunity of seeing him to advantage: when smoothing his feathers he is certainly well worth a visit.—*T. J. Monk; Mountfield House, Lewes, March 27, 1866.*

Serin Finch near Brighton.—A beautiful example of the Serin finch (*Fringilla serinus*) was caught to-day in the parish of Hove, near Brighton. It was taken in a clap-net by a man catching linnets and goldfinches, and brought by him to Mr. G. Swaysland, Queen's Road, Brighton, who purchased the bird, and kindly sent me a message respecting this rare visitor, and at whose house I had the pleasure of seeing the same alive, and within a few hours of its capture. It is in fine summer plumage, and a perfect specimen; and answers in all respects, save size, to the description and drawing of this pretty finch in Bree's 'Birds of Europe.' The bird now belongs to me, and I need scarcely add will prove an ornament to my collection.—*Id.; April 19, 1866.*

Little Ringed Plover near Lewes.—On Saturday, March 17th, when in the brooklands between Lewes and Newhaven, I came upon a wing of nearly twenty of the little ringed plover, and succeeded in shooting three specimens, which are now with Mr Swaysland, of Brighton, for preservation.—*Id.*

Purple Waterhen near Southampton.—I had the extreme pleasure, on Thursday last, of inspecting a magnificent specimen of that lovely bird, the purple waterhen or violet gallinule (*Porphyrio hyacinthinus*), which had been shot during the month of February, 1864, in the parish of Redbridge, near Southampton. The bird is still in the hands of its captor, James Ridges, of Redbridge, who will be delighted to show it to any of your readers. It has been set up in a very life-like manner by that excellent taxidermist, Mr. C. Hendy, of Southampton, than whom no man is more competent. The characteristic tameness of the purple waterhen was well exemplified in this specimen: it was feeding in a bed of cabbage near the Southampton Water, and the gun with which Ridges killed it missed fire several times before it discharged, and yet the bird took little notice of it, although not more than fifteen paces distant. I believe the above will be interesting, as the first recorded instance of the capture of this handsome bird in Great Britain.—*Henry Reeks; Manor House, Thruxton, April 16, 1866.*

Forktailed Petrel at Elmore.—An individual of this rare petrel was taken, in an exhausted condition, last week, at Elmore, near Gloucester.—*W. V. Guise; Elmore Court; April 18, 1866.*

Greenland Shark (Squalus borealis) on the Dogger Bank.—Two of these predacious fish were lately exhibited by some fishermen in a neighbouring sea-port, under the name of “sea elephants.” I was informed they were captured in February on that well-known fishing-ground, the famous Dogger Bank. On opening them a large quantity of cod and ling, &c., were found in their stomachs. I expected to have seen the actual carcasses of these monsters, and was disappointed in finding only the stuffed skins. The true form of the fish had, however, been very well preserved, although the artist had given them a most extraordinary pair of unshark-like eyes. On reference to Couch’s ‘British Fishes,’ I was enabled to identify these fish as the Greenland shark; and as Mr. Couch states that only three or four instances have been known of their appearing so far south of the icy sea as the British coasts, probably some short notice of them may be found interesting. The northern extremity of the Dogger Bank is in latitude $57^{\circ} 24'$, consequently they must have wandered far south of their usual cruising-ground within the arctic circle. I did not measure these fish, but judge they were not less than 12 to 14 feet in length, with a girth in the widest part of upwards of six feet, gradually tapering to the tail. Fins and tail small for the size of the fish; gill-openings small and five in number; skin very rough; the mouth larger, with the internal lining set with a perfect arsenal of offensive weapons. I counted eight rows of teeth; Mr. Couch says nine, and it is quite possible I may have overlooked a row. The position and character of these teeth exactly answer the description given in the first volume of ‘Fishes of the British Isles,’ page 59, and the plate, page 66. The “Old Bushman,” in ‘Ten Years in Sweden,’ says this species “has been occasionally taken on the south coast of Sweden,” and that “it is the only shark which is known to come on the coasts of Finland east of the North Cape.”—*John Cordeaux; April 11, 1866.*

Description of the Larva of Scoria dealbata.—My notes on the earlier stages of this species are not so satisfactory as I could wish, for they were jotted down in a busy time; but, as far as they go, I believe them to be correct. On 2nd July, 1864, I received indirectly from Mr. Wilks (late of Ashford), some eggs which began to hatch on the 7th. I scarcely know any larva which varies so little in tint throughout its growth: of course as the bulk increases more lines and mottlings appear, but they are all of the same ochreous and gray tint throughout. Mr. Stainton, in the ‘Annual’ for 1862, has described the larva just before hybernation, when he says it was $\frac{7}{8}$ ths of an inch in length; but the three which I succeeded in retaining (some dozen others escaped, from my not being able to attend to them in time) grew to a full inch in length before they ceased feeding; all through the winter I noticed that, except in the coldest weather, they remained extended on the leno covering of their flower-pot, as though very fond of fresh air. On the 14th of February they began eating again, and grew slowly till the middle of April, when they changed skin for the last time. About the middle of May they seemed to have attained their full size, and began spinning about the 20th. When full grown this larva is a longish, stout-looking smooth looper, tapering considerably from the hinder segments towards the head; the length $1\frac{1}{2}$ inch; the head flat and rounded at the sides; the anal flap large. The general colour ochreous or brownish gray; but ornamented with so many waved

and irregular lines that it is hard to describe. The head is pale ochreous; down the centre of the back is a double fine dusky line, which, with the first subdorsal line (composed of a double fine thread also), forms a series of irregular figures by alternately contracting and expanding; on the anterior and posterior segments the dorsal line becomes closer and darker. Below the first subdorsal line is a stripe of yellowish or reddish buff; then comes another waved fine double thread; then the yellowish spiracles, scarcely distinguishable in a drab stripe, which is bordered below with a dusky line, followed by a reddish buff line; the belly drab with central and sub-ventral whitish lines. The usual spots are represented by fine black dots, and the central segments in one specimen were suffused with a smoky hue. About the 20th of May these larvæ began to spin, and soon formed for themselves beautiful spindle-shaped cocoons of yellow silk, attached to upright blades of grass. And here, unfortunately, I can say no more: after waiting some time for the perfect insects I examined the cocoons closely, and found that by some mischance the pupæ had been killed. But although I failed, I think the species might be easily reared if kept in the open air, and fed on growing plants of dock, chickweed, knotgrass and the coarse grass which, in its localities, is doubtless the favourite food of this species.—*Rev. John Hellins, in the 'Entomologist's Monthly Magazine' for January, 1866.*

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

April 2, 1866.—Sir JOHN LUBBOCK, Bart., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—
 'Exotic Butterflies,' by W. C. Hewitson, part 58; presented by W. W. Saunders, Esq.
 'Monographie des Platypides,' par F. Chapuis; by the Author. 'Proceedings of the Royal Society,' Vol. xv. No. 81; by the Society. 'The Zoologist' for April; by the Editor. 'The Entomologist's Monthly Magazine' for April; by the Editors.

Election of Member.

John Watson, Esq., of Rose Hill, Bowdon, Cheshire, was ballotted for and elected a Member.

Exhibitions.

Mr. William Rogers sent for exhibition specimens of the ichneumon *Pimpla oculatoria*, which he had bred from the egg-bag of a spider found under the loose bark of an oak-fence.

Mr. F. Smith and Mr. Desvignes both said that they had bred the species, but always from bramble-sticks.

Mr. W. W. Saunders exhibited three interesting objects from New South Wales. First, a number of (empty) eggs, probably of a *Chrysopa*, disposed in a line or chain on, or rather over, the bark of a tree; they were elongate in shape, about twice as long as broad, formed a continuous and connected chain, and each was supported by a

hair-like pedicel about a quarter of an inch above the level of the bark; but the peculiarity of the arrangement was that the first, third, fifth, and so on, were disposed with their longer axes all in the same direction, and rested on pedicels which were perpendicular to the plane of the bark, whilst the alternate eggs were transversely placed, with their shorter axes in the same line with the longer axes of the odd numbers, and were supported by longer pedicels which were inclined at about half a right angle to the plane of the bark: the object of such an arrangement was difficult to imagine, whilst it must necessarily render the process of egg-laying a very complex operation. Secondly, a larva, probably of a Lamellicorn beetle, with two fungoid excrescences, *Sphæriæ*, springing from the back of the head, one on each side, like ram's horns. [See Proc. Ent. Soc. 1834, p. xviii.; 1836, pp. vi., xxiii.; 1838, p. iv.; 1839, p. xxxiv.; 1841, p. xxii.; 1842, p. lxvii.; 1852, p. xxi.; 1854, p. xvi.; 1857, p. xvii.; 1863, p. clxxii.; 1864, p. xlv.; 1865, p. lxxxix.; for other instances of fungoid growths on insects]. And thirdly, four Locustideous larvæ, about half an inch long, attached to a small branch of a tree; one of them was tightly held head downwards by the other three, which were themselves so locked in a close embrace and had their legs so intricately entangled, that it seemed they had been unable to release themselves, and thus had died.

Mr. F. Smith said that, in Stephens' 'Catalogue of British Insects,' the genus *Bembex* was included on the authority of Donovan, who had figured *B. octopunctata* as British, but without assigning any precise locality. In the 'Entomologist's Annual' for 1866, p. 122, he (Mr. Smith) had expressed a hope that this, amongst other genera now expunged from our list, might be re-discovered: he had the pleasure of exhibiting a specimen of *Bembex olivacea* (which name was a synonym of, but had priority over, *B. octopunctata*) placed in his hands by a gentleman at Bristol, to whom it was given many years ago by a Dr. Hicks, who said that he had himself captured the insect near Gloucester.

Mr. J. J. Weir exhibited some larvæ which he believed to be only the common meal-worm (*Tenebrio*), but which were found in a wine-cellar, and had done considerable damage by eating through the corks of port wine, so that the wine escaped: sealing-wax on the head of the cork did not operate as a preventive. Oddly enough, though they had attacked the corks of sherry also, they had not completely perforated them, but stopped short of the wine. It was suggested as a probable cause for the incursion into the cellar that perhaps bran had been used in packing the wine, in lieu of saw-dust.

Mr. W. W. Saunders said that numerous instances of injury done to corks by various insects had been brought before the Society. [See Proc. Ent. Soc. 1835, p. lv.; 1837, p. lx.; 1848, pp. xxxv., xli.; 1849, p. lxi.; 1851, p. cxiv.; 1852, pp. viii., xvii., xxiii.] He remembered a case in which a number of larvæ of *Dermestes lardarius*, which had been brought into the docks with a cargo of skins, made an incursion into a neighbouring warehouse in which were stored some manufactured corks; these they perforated and rendered useless: large damages were claimed against the Dock Company, and a law-suit seemed imminent, but the matter was finally compromised.—*J. W. D.*

Notes from New Granada. By HENRY BIRCHALL, Esq.*

The Tropical Forest.—You seem to fancy it fine to have eternal summer: if by that you mean continual heat, but no freshness, you are welcome. The unpleasant part of tropical climates, such as we have here, is that there is never anything to correspond with the growth of seasons out of each other. It is all like those horrid dry trees we used to have in the toy farm-yards,—with sheep and other beasts,—always green, but never giving a notion of fresh-growing of spring nor summer fullness either, much less of autumn ripeness. Perhaps it is better than Bradford smoke; but then one hour thence brings you upon Rumbald's Moor and down into Wharfedale. I went on a tour of exploration lately: should like you to have seen my clothes and my legs after some days' tramping in the "gorgeous and ever-green magnificence of a tropical forest," which, being interpreted, signifies the rotten, fœtid, slimy, tenacious, black mud of a thousand years' decay, mingled with the twisted roots of living—and the sharp sticks, thorns and fragments of dead—vegetation of every botanical family under-foot, with a tangled mass overhead like the contents of a gardener's pruning-basket and a woman's sewing-silk bag, mixed together with thorn-bearing stems, set conveniently wherever you are likely to make a false step and catch at the nearest support. Your tropical forest is one of the biggest impostors ever helped into success by poets worthy of Moses or of Warren. The food of the scanty population appears to consist of monkeys, which I saw, opened and trussed, hanging with squirrels, toucans and peccary pigs. I resisted the temptation to cannibalism, until I shall have seen whether Owen or Huxley gets the best of the argument. If the former, it will do to eat freely of what the latter would regard as a prohibited meal to the whole anthropoid race. The absence of life in the forest is very extraordinary. You walk for hours and do not see or hear a living thing bigger than a bee or a tomtit. I cannot make it out at all: in the four days scarce saw a butterfly; a few squirrels and common birds only; but my business was under-ground chiefly. The country up there—say 1000 to 1500 feet higher than this, perhaps 4000 or 4500 above sea-level—is honey-combed with the workings of the Spaniards. We went into mine after mine within a few hundred yards, some of great extent—I cannot make out when or why abandoned. But the forest has reasserted its

* Communicated by his brother, Edwin Birchall, Esq.

dominion, and the bottoms of the ravines are choked deep with fallen trees, the indescribable tangle that grows everywhere binding it all into a mass of leafy, thorny confusion, that must be seen and felt and pushed through with aid of hatchet to be appreciated. In one place I had a big tree, seventy or eighty feet high, felled to get at a bees' nest. The crash of this huge fellow down the hill-side into the bottom was worth seeing and hearing. There was plenty of honey, but nasty and acidulous to my taste, of a small orange-coloured bee, very vicious, whose venom appeared to lie in his jaws, not his tail; bites like mad and raises sore blisters. Did not do anything to me; I keep out of the way in such cases. Talking of stings, I have got two or three so-called "tiger ants" for you—are as big as a large wasp, black with large spots and stripes of cream-colour; have a dreadful sting, just like a wasp's, which generally produces fever: not uncommon about my house at times.

Agriculture of New Granada.—I have nothing new to read at present: I am waiting for Lyell on Adam, and want to see your review thereof. The principal matters of interest in the English papers seem to be the American war; the war against sparrows, tomtits and company; the attack on those who see no harm in plucking ears of corn on the Sabbath day; the distance of the sun from the earth; the proximate shut-up of the coal trade by the exhaustion of its article; and the weary quarrel about iron ships and heavy guns. The tomtit question seems the most interesting: I have no doubt the birds do eat a power of fruit, as they have nothing else to do in July and August; but what they do not eat would also be eaten if they did not walk into the caterpillars in the spring. One gentleman says they worried his gooseberries when lots of caterpillars were on them: no doubt, and so would anybody not an Annamite ambassador, who, I see, considered pickled grubs their greatest delicacy, and very nice too. If men will set up gardens among woods what can they expect? Here if you go in for backwood-clearings, your maize is no sooner in ear, green and delicious, than down come the monkeys, each carrying off six ears with ease in this manner—one in each hand, one in his mouth, one under each arm and one under his tail! When the monkeys have walked off, a herd of cajuches and peccary pigs (or peccant pigs, more properly) arrive to grub all up, in order to bring down the crop to their snouts. Kill one, and the rest will soon persuade you that a tree is good lodgings. The pigs off, the parrots drop in by hundreds, and make a neat job of their share of it. Other birds are always at it, in

spite of monkeys, pigs and parrots, and in the meantime it is more than probable there would be nothing to begin with for aforesaid agriculturists, the whole business having probably been settled, before the crop got an inch high, by beetle larvæ of the most destructive capacity and propensities in proportion to their magnitude. At which end, I wonder, would you begin in this case; and whilst you are considering or writing to the 'Times' the wild vegetation would grow fifteen or twenty feet high all over, and you might begin the clearing again, in order to watch the interesting process, and make up your mind which was most culpable, larvæ, parrots, pigs, monkeys, or feathered fowl in general.

Origin of Species.—Pray send me a report of the feathered reptile. How does he jump with Darwin's hypothesis, and was he going in for crocodile or eagle when the catastrophe overtook him? The discovery of him illustrates one of Darwin's points, that we see only a small bit of the animated existence of ancient times; at any rate, finding him, we may next come on the one who exchanged his fore legs for wings, or *vice versâ*, if that was the way of it. I have been reading the Du Chaillu quarrel in the 'Athenæum' of September, October, &c., 1861. Truly he comes rather queer out of it. At Hondur I saw Du Chaillu's book. It does not attract me much; I so abhor African names, and to read a discredited traveller is not very satisfactory. Waterton settles the story of the gorilla fighting like Tom Sayers, which never was credible to any one who considered his wretched legs and monstrous paunch in the British Museum. Huxley appears determined on having his own pedigree cleared up: he no doubt says politely to Owen, "My pedigree, sir, begins where yours ends," as the old Joe Miller has it. I cannot quite see my own way to that doctrine of ape ancestors, I confess, and yet, if we may be descended from Digger Indians, the other is conceivable. The grand point lies in the true nature of the distinction between reason and instinct; that is, do they differ, except in degree? I never have seen this fairly dealt with. As for degradation and all that, there is nothing in it. If the Creator has so ordained that out of lower shall spring higher orders of being, I see no reason why we should complain, but the contrary. That the whole universe is the result of what we call the "law of orderly succession of phenomena," in accordance with the original conception of the Divine Being who is the mover and sustainer as well as the Author of Creation, appears to me the only possible conception. I can see no way of dragging in what is called an act of creation without upsetting

the whole universe. Certain powers, forces, or what you will, being once set in action according to immutable sequence, all the phenomena of creation follow in due time: nothing more is wanted. No doubt people prefer the old notion, which gives us more importance.

HENRY BIRCHALL.

*A short Description of an Acarus and its Agamic Reproduction.**

By RICHARD BECK.

(Reprinted from the 'Quarterly Journal of Microscopical Science' for April, 1866.)†

AFTER keeping one or two species of *Acarus* for a very considerable time, and having no difficulty in increasing or diminishing their number according to the treatment I pursued, it was much to my surprise when about the middle of last summer they began rapidly to disappear, and in a comparatively short time I was quite unable to obtain from the whole of my stocks any living specimens.

On one occasion, when making a general search to see whether the *Acari* had merely moved their quarters, I found in the thread of a spider's old cocoon a species of *Acarus*, so entirely different from those I was looking for, and presenting to me such novelty in appearance, that I lost no time in carefully securing this and one other specimen, which were all I could find: one of these, however, was injured in its capture, and died immediately.

The general appearance of the one still left was that of a female, but without a male I thought there would be no chance of obtaining any reproduction of its species, and I had moreover no clue to the food it required. Instead, however, of following the often too hastily adopted plan of merely making a mounted preparation of my specimen, I determined to preserve its life as long as possible, and I am now not

* Since reading this paper Mr. Bockett has shown me a specimen of the same *Acarus*, mounted by J. Bourgoine, of Paris, which he names "*Cheyletus des pilletteries* (rare)."

† [I have thought it desirable to reproduce this important paper in a Zoological Magazine, because its interest is general, and extends beyond the limited circle of microscopists. Agamogenesis, in all probability, exists in nature to a far greater extent than has yet been supposed. The observation by Professor Huxley, quoted by Mr. Beck from the Linnean 'Transactions,' shows how great is the necessity to avoid drawing any conclusions from the absence of evidence. The production of evidence leads to positive inferences, but its absence is only valuable as illustrating the paucity of observers on the insufficiency of their observations.—Edward Newman.]

only enabled to prepare a specimen whenever I like, but also to supply some facts as to its life-history which could only have been obtained by keeping it for some considerable time in a living state.

The question of food puzzled me for some time, as I naturally confined myself to obtaining supplies from the locality where I found the *Acarus*, but a part of the cocoon, the eggs of a spider, and their first cast skins, were all alike refused. It was only as a last resource and judging from the remarkable size of its falces, together with its peculiar movements, that I gave it some living Acari of a different species; these I soon saw were quickly seized—the disappearance of my colonies of Acari which I have mentioned was at once explained, and I continued to supply my new specimen with food, hoping it would turn out to be an impregnated female.

In a few days it laid some eggs, and these duly hatched, and many subsequent generations have been produced by them. I am now able to supply the following facts connected with this *Acarus*, which I believe are new.

The eggs, as compared with those laid by other species of Acari with which I am acquainted, are rather small in proportion to the parent; they are of a bluish white colour, transparent, and adhere to the substance they are laid upon by a short thread at one extremity. At the age of two or three days in summer time, the young may easily be detected inside the egg, which hatches, according to my memoranda, in five, six, or seven days from the time it was laid; the variation in this and other periods of development being due, I believe, in great measure to the temperature of the atmosphere.

The young as it comes from the egg has only six legs; it is white, perfectly transparent, and very active, wandering about in every direction. At the age of seven days it casts a skin, and then acquires eight legs; at a further interval of seven or eight days it casts a second skin, and then arrives at maturity; before each of these moultings the individual remains sometimes for one or two days perfectly stationary and apparently dead; I mention this circumstance so that any one who likes to repeat these experiments may not disturb the *Acarus* in this important operation.

This *Acarus* soon after arriving at maturity assumes a yellowish green colour, and I will endeavour to describe some of its more remarkable features at this stage of its life.

That which strikes one at first sight is the size of the falces, for I presume they cannot be correctly termed mandibles; they are largely

developed, apparently very powerful, and move in a horizontal direction; the two when spread out forming a complete semicircle. The free extremities of the falces are somewhat complicated in structure; on the outside edge is a strong claw, with two short spurs at its base, and immediately within this on the inner side are two combs, very similar in general appearance to the pectinated claws at the extremities of some spiders' feet; the inner one is smaller than the other, but the two move simultaneously and independently of the outer claw. There are also a few strong hairs situated near the combs.

When this *Acarus* seizes another one of a different species, which it does by its falces, laying hold of a leg or any other part indiscriminately, the prey, after a lapse of about fifteen or twenty seconds, becomes poisoned or paralysed, the legs bend up under the thorax, and no part of its body makes any resistance to the pulling backwards of the devourer, who, when she finds this passive condition of her prey, deliberately sucks out the fluids with an apparatus at the mouth, and does not leave it until it is entirely empty and shrunken. The poisoning process, however, does not occur when this *Acarus* feeds, as it frequently does, upon one of its own species. In this case the prey continues to move and show signs of life as long as any fluids appear to be left in its body, and even, when a very small one has been devoured, I have noticed a movement of the legs full half an hour from the time of its first seizure.

The parts of the mouth project from the bases of the falces and two sharp pointed and close fitting lancets, answer the double purpose of piercing and conveying the fluids, which appear to be sucked up by a muscular movement at the base of the piercers. The *Acarus* is sufficiently transparent for the process to be watched under the microscope, and the fluids may be distinctly traced in their passage from one *acarus* to the other.

The external structure of this *Acarus* appears to be very simple, and there are but few features to notice beside those of the head. Two rows of short hairs, about twenty in all, run in parallel lines, and a short distance apart, leaving a broad central band, underneath which a large vessel is easily detected, and appears more or less filled with white flocculent matter. In no part can I detect any spiracles or tracheæ.

Of the legs, the first pair are during life constantly raised and lowered in a vertical direction, and from this peculiar action, combined with their two unusually long terminal hairs, I presume they are employed as feelers. The last joint of each tarsus is furnished at its

extremity with two hooks and two longitudinal and parallel rows of delicate tenent hairs; by the aid of these this *Acarus* walks with some little hesitation in an inverted position upon glaſs.

The anus I believe to be represented by two slightly projecting flaps at the free extremity of the abdomen, immediately below which is a longer aperture, from which I presume the egg is emitted.

Wherever this *Acarus* in a natural state deposits its eggs, in that part it takes up its quarters and remains for a considerable time: this is in fact necessary for the protection of its eggs, which would otherwise be devoured by *Acari* of the same and probably other species. They will frequently destroy their own eggs themselves when disturbed, or when pressed for food.

Having these *Acari* now well established in a cupboard I mostly find them partially concealed in some small cavity, and when in a mature state standing over a quantity of eggs in every stage of development; the empty egg-shells from their extreme thinness reflecting a brilliant blue light, which catches the eye more quickly than the *Acarus* itself.

My object from the first in securing this *Acarus*, and in keeping it alive was to obtain specimens of both sexes, but I have never yet been able to detect a male. I was much surprised to find that every specimen I selected laid eggs, all of which duly hatched, and to make sure whether this was really a case of agamic reproduction, I determined to isolate some individuals very carefully, and I obtained the following results. In all these experiments I have employed the "live traps" which I described in the last number of the '*Microscopical Journal of Science*,' and they have answered perfectly, not only in completely isolating the specimens, but also enabling me to put them under the microscope, or to supply them with food at any time without disturbing them in the least.

On July 10th, of this year, a young *Acarus* of this species was taken from a trap in which there was only a mature female; it was completely isolated, and on the 29th of the same month it laid eggs, which hatched on the 4th of August. One of these on the day it was hatched was removed to a trap and also completely isolated; by the 13th of September it had laid eggs, and some had hatched. On the 19th of September two of the young from the last mentioned trap were separated and secured: these I now have living and in a mature state; neither have as yet laid eggs, but I fully expect they will do so unless the approach of colder weather retard the process of reproduction,

which I think is very probable, or it may perhaps stop the increase altogether.*

The securing a succession of three generations, including some accidents, have with me extended over a period of about five months, and I am quite prepared to admit that the proof of agamic reproduction in this *Acarus* would have been more satisfactory if continued through a longer period, but after reading Professor Huxley's paper on the Agamic Reproduction of *Aphis*, in part of which he states that "in *Myriapoda* and *Arachnida* the process is not known,"† I have thought that the few facts I have just given were of sufficient value to bring before your notice.

I am, moreover, in a position now to supply a limited number of living specimens to any one who is anxious or willing to investigate the subject, and I can at any rate promise a certainty in the supply of food, for I find that they are perfectly satisfied with the common cheese-mite.

A further investigation, therefore, into this subject, only requires the expenditure of a moderate amount of time and care, and the importance of agamic reproduction may be estimated by the attention it has already received from the most scientific naturalists.

Notes on the Quadrupeds of Lanarkshire.

By EDWARD R. ALSTON, Esq.

(Continued from S. S. 160.)

Bank Vole.—Since writing my notes on this species (S. S. 9 and 159) my attention has been called to Macgillivray's 'British Quadrupeds' (vol. xvii of the 'Naturalist's Library'), from which it appears that specimens of this species from Kelso, and from Bathgate, in Linlithgowshire, had come under that gentleman's notice (p. 272). I was therefore mistaken in supposing that this vole was new to Scotland, although it has been very generally overlooked. Mr. Macgillivray well observes that "Although the habits (of our native *Mammalia*)

* (March 16, 1866). Since writing the above, one of the specimens last referred to was killed; the other laid eggs which hatched on the 29th of December, and one of these young ones is still alive, but isolated in the same way as its predecessors. The cold of the winter has retarded the development of these *Acari* very considerably, and so much so as to allow the other colonies of *Acari* to appear again in their wonted numbers.

† Linn. Trans, vol. xxii. part 3, p. 216.

cannot be so easily observed as those of birds, nor specimens of many species be readily procured in any particular district, yet they constitute a most interesting portion of our Fauna, the complete elucidation of which is yet a desideratum in our scientific literature. The bats, shrews, seals and mice, are the groups in which discoveries more probably remain to be made.”—(p. 309). To this it may be added that local lists, which some of your readers might be able to supply, are much wanted to show their geographical distribution.

Squirrel.—I was pleased to find, in looking over the above work, that Mr. Macgillivray confirms my observation (Zool. 9482), that the squirrel does not hibernate so completely as is often supposed. He says, “When the cold weather commences it becomes less active, and often dozes for days in its retreat; but it does not become completely torpid; and I have seen it abroad in the midst of a most severe snow-storm. If the weather be comparatively mild, it exhibits its usual activity, feeding on bark and twigs.”—(p. 232).

Rabbit.—These destructive little beasts have increased to a surprising extent throughout the west of Scotland within the last twenty or thirty years. Before that time they were, I believe, almost unknown in many places where they are now only kept in check by diligent shooting and trapping. Their numbers and mode of life render their habits more easily observed than those of many other species. When the female is about to bring forth she retires to a separate burrow, which has very seldom more than one entrance; whereas the old rabbits like always to have a loop-hole for escape, often hidden by long grass and generally excavated from within, so that no heap of thrown-out earth may betray its whereabouts. Here she makes a soft and warm bed of her own fur, and when the young are born she covers over the mouth of the burrow, and visits them only by night, as may be ascertained by marking the soil heaped over the entrance. The number of young in each litter is usually five to seven, rarely nine, but I have known one instance of eleven being found. As these wild rabbits breed at very short intervals (some say as often as eight or nine times in the year), and as they come to maturity at a very early age, their rapid increase, when undisturbed, can readily be understood: On the moors many rabbits have no regular burrows, but live in runs among long and matted heather. At Cadzow there is an old oak, whose gnarled stem rises at an angle of about forty-five degrees; the hollow trunk is inhabited by a number of rabbits; they have an entrance near the root, and when hunted with ferrets they

often leap from a hole two or three feet from the ground. The black and the pied varieties of this species are common enough, and I have a very pretty reddish fawn-coloured* example which was shot on the moors two years ago. All these appear to be accidental varieties, and not to be owing to any admixture of tame blood, for they all occur in places far away from any rabbit-hutch. Perhaps breeding in-and-in may be one cause of variation in colour in this and other animals.

Wild White Cattle.—I regret to say that the fatal cattle plague is making sad havoc among the wild cattle at Cadzow. Of the whole number of between forty and fifty head, nineteen are already gone and others are attacked. None of the numerous "cures" can be tried, for as long as the patient is able to move he flies from his would-be nurses, and, failing that, attacks them with what strength the disease has left in him. Fortunately one bull has recovered, so that there is still a hope of the breed being preserved. It is sincerely to be hoped that this herd—a relic of the days when the wolf, the beaver, and the bear roamed through our Scottish forests—may not yet be lost.

EDWARD R. ALSTON.

205, Bath Street, Glasgow,
April 12, 1866.

Otter at Witley Park.—On the 10th of April a full-grown male otter was killed at Witley Park, the estate of Mr. Allan Chandler. The gamekeepers were out with some beagles, looking for rabbits, when the dogs discovered it under the overhanging bank of a rivulet. After an exciting chase of nearly half an hour it was killed among some bushes, by one of the keepers, who had no idea what it could be, but thought it some dangerous wild beast that would very likely kill the dogs, in which opinion he was confirmed by its formidable show of teeth. There does not appear to be any report or tradition of an otter having been before seen in this immediate neighbourhood, and the occurrence of this specimen seems remarkable, as there is not a stream for several miles which one could not easily jump across, the rivulets of these hills forming the sources of the rivers of the lower country. The rivulet in which the animal was found is, I believe, the head-water of one which falls into the sea at Littlehampton.—Charles G. Barrett; Haslemere, Surrey, April 19, 1866.

Pine Marten in Lincolnshire.—A remarkably fine specimen of the pine marten (*Martes Abietum*) was trapped last year by the gamekeeper in the neighbouring parish of Riley: it is the second captured in that locality. The throat and chest of the animal are cream-yellow, interspersed with a few large brown spots on the lower part of the chest. It is now stuffed in the possession of a neighbour of mine.—John Cordeaux; Great Cotes, Ulceby, Lincolnshire, April 30, 1866.

Letters on Ornithology. By HARRY BLAKE-KNOX, Esq.

LETTER I.—BRITISH PELICANIDÆ.

Subfamily PHALACROCORAX. Genus GRACULUS.

A Natural History of the Shag or Green Cormorant, with an Account of all its Plumages and Transformations from the Nestling to the Adult Bird.

HAVING devoted, I may say, the last six years of my life to the exclusive study of the sea-birds in their native haunts, as well during stormy winters as sunny summers, and having noted many of their habits and peculiarities, many of their changes of plumage, and most things that time devoted to the subject could teach me, I now undertake to write some letters on the sea-fowl, more particularly on the habits and plumages of those frequenting the County Dublin. The immature plumages I have made my particular study, and as many of them were never in print before, and never followed out on a continuous chain by any author, for the several years passed in immaturity by most of the sea-birds, I therefore hope that these letters may interest some, and also supply a want long felt—a truthful and accurate account of the plumages and transformations of the various water-birds, so common and yet so obscure. It is not without reluctance that I sit down to write these letters; *first*, because I am like a bird, and love the free air, and one hour's confinement to a room irritates me; *secondly*, because the result of my labours in tracing the immature plumages of the various species from one season to another, till I have connected them in a distinct chain, link by link, from the first plumage to that of the adult, may be doubted, particularly when I must contradict authors long followed as the wise men of Science, and looked up to as the settlers of every dispute, or fill up gaps in their writings, on these plumages, so glibly passed over as being "so various" or "so well known to everyone as to be needless to describe." Now these plumages are not known to everyone, and were not known to those themselves who wrote thus, as their writings show. Any author that I have read, in giving the seasonal plumages, only shows how very ignorant he was on the subject. My collection of immatures in their various stages has been visited by "professors," and they could make no hand of it, not knowing the herring gull from the lesser blackback

in their younger years, and as to naming the age of a young bird it is quite a mystery to them.

These men, book and cabinet naturalists, of course, pooh! poohed! the subject, and quite agreed that the plumages were so various as to be needless to describe, devoid of all interest, or, in fact, of no consequence to know. Now the plumages of the sea-fowl are not so very various; true they are generally three years in attaining the mature dress, but then each spring and autumn brings its changes as regularly as the birth and death of the leaf, and, if birds can be procured at the desired times, link fits link without any difficulty; but many a weary month and year may be spent in search of one link, till the subject is almost thought hopeless by any but the stubborn votary of Nature, who forces Dame Fortune to give up her treasures, not the less sweet for their difficulty in attaining. That the subject is of little consequence may have two parties, one for and one against, yet I know where the true ornithologist will place himself, and will agree with me that a knowledge of a bird's immature plumage, and the time it remains immature, is of just as much consequence as a knowledge of the adult dress. The great men of Ornithology, who know the names of thousands of foreign birds (skins, perhaps I should say) may smile with their *confrères* at the humble aspirations of the British naturalist who likes to know all that he can of the habits of the birds of his native land. I would say to those who may have met, perhaps, opposition and slight on the subject, that if their lives were twice ten hundred they would have still to learn from the birds of their own dear country, and also I would tell them to try and find out little things, and never to let them be lost again if once found out, and never to despair.

I am happy in being able to say that for the last few years I have preserved many immature birds to illustrate these papers, and though I may not at the present time be able to show every change, yet in a year or two I hope to have perfect illustrations of any paper I write. Every plumage is taken from the bird in the flesh, and should I at any time have occasion to use a foreign skin I shall mention it.

Habits of the Shag.—The shag is both gregarious and solitary in autumn, winter and spring; generally gregarious in summer, many breeding in company. With the dawn, along most of our rocky coasts, the shag may be seen winging his way to some favourite rocky bottom to fish (it prefers rocks to any other bottom). In the early twilight, flying a foot above the water of a calm autumnal sea,—no sound breaking the stillness save the rippling of the water on the rugged

granite coast, so incessant and ceaseless that the sound is scarce known,—the shag is like some evil spirit coming upon you from the mist, his body looming tremendous in the fog. So near will he fly at these times that the sharp hissing of his wings is clearly audible, but then, the poor fellow, how wildly he will stare, and twist his snake-like neck from side to side, when he sees you, for he dreads man's presence, and alas! rightly, too. In his hurry to turn he will throw himself upon one side nearly belly up, and then make away at right angles to his former flight, casting furtive glances over his quick beating wings. We go on a little further, and perhaps ten or more are flying in a string about twelve yards in the air: they pass over the boat, with the feet stretched out beneath the tail, the wings beating quickly, and then sailing with a light gliding flight, for the leader proposes to fish, and gradually they fall to the water; the feet touch first and then the body falls upon it, the wings beating three or four times before closing. For some seconds they seem to rest; one then jumps out of the water and dives head foremost, the rest follow, and an incessant diving is kept up, the birds gradually and unitedly following the same direction. Nothing can be more interesting than a sight of this kind. They are now all beneath; a few good strokes bring us into their midst: one pops up a yard from the boat, and is down as quick as up; another rises some yards distant, eyes us, dips his bill in the water, utters his call note "go away," till all have risen to the surface, and then, in an indiscriminate mass, they rise from the water, making a tremendous commotion with their wings and feet (the shag strikes the water with wings and feet for some yards before he gets fairly on the wing). One has risen after all the rest had flown, with a good sized "brame" (wrasse) in his mouth, and the poor hungry fellow will not drop it to follow his companions, but makes furious efforts to swallow it, dipping it in the water, shaking it, and bolting at it, till at last he does succeed in getting it down, and shakes his head with satisfaction. I have never known a shag to tear a fish, to hold it in the foot, or to throw it up in the air and catch it head foremost, as some describe, though I know them in nature and confinement: the fish is always bolted entire. "What a fine crest that fellow has!" says Fred; "shall we get him?" "All right." "Pull a stroke nearer." Quickly the little boat darts ahead, and the shot tears up the water all around him: still he has dived, for no grains struck him in the head or neck, or if they did were only skin wounds, and the back is never pierced except the shooter is well above the bird. An Ely's

green long distance greets his next rise, but, like a bullet, hits the water worthless beyond him. He is now up for diving, and you never know, except you are an experienced sea-fowl shooter, where he will rise, as they dive to deceive you, and then turn under water. There he goes flying from the water, about a hundred yards off. I fire to make him drop, as this bird prefers seeking safety by diving rather than by flight, and I am not disappointed, for he has dropped to the water and is diving anew. (How I used once to humbug some crack shots this way, dropping, as it were, a flying shag at a thousand yards off, the whistle of the bullet being enough to make them seek safety in the water.) They, of course, will not always fall to a shot. I have seen five flying in a string, close the wings, and fall as one in the water, disappearing the instant they touched it. Another shot is fired at him, and the neck again escapes, though he is the centre of a target. He now stretches his wings, jerks his body strongly from the water, and makes away as if determined to fly this time, but I am just loaded in time—there is no deceit this time in his fall; there is begad! I have missed, and he has only dropped for safety again, and has dived. Hah! no, there is no mistake; he has risen to the surface, and that stretched-up wing * * * * Poor fellow! “What a beautiful bird, and what a grand specimen he will make!” Yes, truly no bird is more beautiful than an adult shag, with his plumage of green, velvet-black, and burnished bronze; the recurved topping on the head, the orange and black patch at base of bill, and the dark green eye. At these times I curse collections, for I know that I have taken what I should not take, and what I cannot give—life. The shag is most easily shot. That they will dive at the flash, as some assert, I have never seen: though I have shot them in Ireland, England and Scotland, I never saw one fired at that the shot did not strike round before he dived. If they did dive at the flash you must hit them as they jump out of the water to dive. This is a good excuse for bad shot. Modern authors have copied the writings of the ancients when flints were in use, and have thus given the shag credit for what he cannot do—dive before the shot from a percussion gun reaches him. It is nine o’clock and breakfast is ready, four hours of a fresh morning with a cold bath at five making one envy the banquets of the shags, but some of the luscious still kicking mackerel, will soon be hissing over the coals, and after them we will take a cruise to Lambay and Rockabill, where the shag may be seen really at home.

The breeze has freshened since morning, and under two powerful

lugs we are sailing gunnel under, the white hissing spray passing in showers over the bow, and falling with a monotonous "whish" upon our oiled clothes. One of the "hands" is listlessly eyeing the seething water, the other with sheet in hand ready to ease her as the tremendous puffs from the "nor'-west" strike us. Quickly gliding over the white-fringed waves skim the brownheaded, the common and the kittiwake gulls: above our heads, and prying into the water in our wake, are the lesser blackbacked and the herring gulls, and occasionally with slow and heavy flight passes the great blackback, too wary to give a shot. The guillemot and the razorbill fly from the water or dive with expanded wings at our approach; the northern and redthroated diver quietly disappear in the briny depths. Gannets, at some distance, are plunging head foremost at the mackerell, but one coming too near falls kicking into the water, his falling bringing a great blackback within range, for curiosity will often tempt them beyond the bounds of discretion, but though we hear the shot cracking his quills, and see him disgorge the fish from his throat, still he sails majestically away, seemingly unhurt. "Mackerell cocks" (shearwaters) have been round us all day, and the "skiee" of the tern is often heard, while, with jerking flight and down-pointing bill, the little fellows pass and repass the boat: I distinguish the common, the arctic, the Sandwich and Dougal's; the two latter are very wary birds, and though common are seldom shot. The pomarine and two smaller species of skuas may be seen in almost every flock of kittiwakes, chasing and annoying the poor birds for their hard-earned fish; sometimes, though rarely, the big fellow himself may be seen, vassal to none but the noble old blackback. Numerous ducks, geese and land birds pass us, for they are performing their autumnal migration southwards. We have now reached Ireland's Eye, among the rocks of which are numerous cormorants, shags, turnstones, oystercatchers, curlews, whimbrels, dunlins, common sandpipers, kingfishers and herons, and, wherever there is a little shingly beach, a flock of ringed plovers are sure to rise with a plaintive whistle. Redshanks, greenshanks, godwits, gray plovers, knots and purple sandpipers are pretty sure to be met with if you land among the rocks. We stretch away now to Lambay, seven miles about from the "Eye," and there cormorants and shags may be seen in dozens upon their favourite rocks, which are always lofty and commanding, and generally isolated. (Cormorants and shags have favourite rocks in different parts of a rocky coast, where they will always make to to rest. In the immediate neighbourhood of Dalkey are the

Muglins and Clara, which are rarely without some of these birds. Where no commanding isolated rock is to be found the shag makes a buoy his perch. They seldom regularly perch like the cormorant, and unlike that bird, prefer the flat surface to the ring on top). They leave their rocks well "whitewashed" with their *excreta*, which is voluminous, oft ejected, liquid and of a white colour; but if allowed to remain and collect, particularly on wood, turns to a hard limey substance: a strong smell of fish and ammonia pervades these rocks, and is borne for some distance on the breeze. Here they rest themselves, or stand to dry, for after feeding they wash themselves thoroughly by striking the closed wing on the lower part of the back, ducking the head and even thrashing the water with out-spread wing till they are perfectly saturated. Some are standing with the wings expanded, gently fanning them; others have their dark pinions outstretched and motionless before the sun, their faces having a look as solemn and contented as good feeding could make them; others again are preening themselves, or standing on one leg with the head crouched on the shoulder, or asleep with the bill buried in the feathers of the back; but the greater part, and particularly the cormorants, are shooting their long snake-like necks from side to side, eyeing us intently, as if "smelling" danger afar. We have approached within a hundred yards, when some old fellow places his body in a horizontal position (they stand well erect), stretches the wings for a moment or so, and then, with a jerk from his feet, launches himself from the rock; he falls till just above the water, and then makes away with a strong rapid flight; most of the rest follow the leader and form a string: some remain and permit a long shot; they then either fly or drop like stones into the water. The wind has died out, and we are becalmed, but an ominous ground-swell portends something. We go ashore on the Island for an hour or two, eat our dinner, and shoot a dozen or two of rabbits, and some birds for their skins. It is now about six, and the sea like a mirror, no air ripples its calm surface, but that heavy up-channel swell is growing stronger. The shag and cormorant may be seen winging their way from all points, in long strings or solitary, to the caves of this Island for the night. They are flying uneasily around their roosting-places, as if calculating how high the swell might rise, or too wary to rest without making sure that no danger is near; one at last falls heavily to the pinnacle he thinks the softest, and the rest soon follow his example. Should two happen to rest beside each other they will put their bills together and caw like young rooks when

feeding. They seem always very amiable. They always stand, day and night, head to wind and in a row, for if not so they would destroy each other by their powerful evacuations, which are often cast ten or twelve feet from them. It is twelve o'clock, P.M., and a puff of wind, as if from a furnace, strikes us, followed by one the very reverse; the anchor is up, and we make for the harbour of Howth, the lugs reefed down to mere pocket-handkerchiefs, and yet with four of us sitting on the windward-gunnel every blast lugs us gunnel under. We reach Howth Harbour, seven miles from Lambay, safely, and also seven miles from home, a good bed and tumbler of punch, both of which I put faith in after a hard day. With daylight we cross the bay and are home to breakfast.

Flight.—The shag's flight is generally low; I have never seen it take such elevated flights as the cormorant: it is powerful and very rapid, making quick headway against the strongest gales: it is performed by rapid beats and occasional sailings of the wings. The neck is carried out straight, and the feet beneath the tail. In turning the flight is slow, and is generally performed by a long curve. When alarmed it will throw itself, as it were, round, and is some time getting up full speed again. The impetus of its flight is very great. I have seen birds killed dead "duck and drake" along the water (*ricochet*, I should say) for twenty or thirty yards. It never fishes, as some have said, from the air, by suddenly darting into the water: they have mistaken the young gannet for it. In rising from the water it strikes it with the wings and feet, and will often make several efforts before getting up, particularly if full of fish, though at most times it rises with no more difficulty than any heavy diving bird.

Diving.—The shag puts more faith in its diving than in its flying power, if in danger: it must therefore think itself good at it. I always found it a pretty good diver, some even attaining powers little inferior to that of the great northern diver. It will generally when swimming permit you to get a shot, sitting half submerged. If missed it will try and avoid giving you a second chance, sinking the body and saturating the feathers of the back, so that shot slips off them as if greased. The dives exceed sometimes a hundred yards, though generally they are short and dodgy. The wings are and are not used under water. The bird generally sits deep in the water, the neck straight and at right angles to the body, the head parallel to the body. I have never seen the head thrust under water, as some say, to look for fish, neither do I believe that the shag sees his prey till he finds them on

the bottom, and that he dives by chance. I have often seen the bird dip the bill in the water and then shake the head. In confinement I always found this was done to cleanse the bill of slime or any foreign matter, such as its own down.

Use of the peculiar Tail, the Hooked Bill and the Serrated Claw.—The uses of the tail of this family are very imperfectly known, and yet they cannot but be an object of conjecture to the ornithologist. I think the following uses, which I have noted, may interest some, as they never appeared in print before. The shag, being a ground-fisher, requires, in deep water particularly, a strong perpendicular dive. Most of the strong rocky coasts, about or in the vicinity of which shags are only to be met with, are full of deep holes, and in such places fish are more abundant; consequently these holes are greatly fished about by the shags. To accomplish these deep dives Nature has bestowed on the shag and cormorant a beautiful instrument, in the long, stiff, fan-like and limber-jointed tail. When diving, the bird, by a downward stroke of the tail, lifts the body out of the water, the return jerk of the tail, together with a stroke from the feet, turn it in the air (the whole action representing a semicircle), thus giving it a head-foremost plunge. The bird, when routing about the weeds and rocks at the bottom, generally keeps the body perpendicular, that is, tail up; it steadies itself in this position by means of the extraordinary tail. The bill is then thrust *sideways* into the chinks and crevices of the rocks, to which its peculiar food, wrasse, gobies, lashers, congers, &c., make for protection; the bill being used sideways can work in a much narrower crevice than if used straight, and if I had not ocular proof of this side insertion of the bill under stones, &c., to take out fish, the fact that most fish taken from the throats of shags had the hole made by the hook of the upper mandible of the bill in the side, would, I think, be sufficient to show that the fish are thus drawn from their holes, gaffed, as it were, and then taken to the surface and swallowed. So we see that the tail and bill are not *freaks* of Nature, but organs of vital importance to the shags. How any writer could state that the shag and cormorant use their tails as props while standing I cannot conceive, for such is quite erroneous; it is generally in the bird's way and trailed after it on land. When perched on a narrow or small footing the tail is used to balance the body. I should have stated before that, while at a great depth under water, the shag must find it much easier to keep in a perpendicular position than a horizontal one, as it cannot always succeed in taking a fish from its hole the first dive, and often for many dives, as any

one who knows the bird may see by the repeated diving in one place. A bird also shot after diving in one spot for perhaps half an hour may only contain one or two small fish, showing that a plurality of fish was not the cause of its obstinately keeping in the one spot. I never but once saw a shag gorged with fish. The serrated or comb-like claw is used, as I have often seen in my aviary, to remove ticks from the head and neck, the only parts infested with them; these ticks are sometimes as large as a fourpenny bit. This comb is admirably adapted to the purpose: that it holds fish with it is a capital idea! What a clever fellow first found it out! a little flat toothed comb, not a quarter of an inch long, be enabled to hold a fish!

Food, and how Swallowed.—Living fish are the natural food of this bird, though stale fish (so that they have not lain in salt water), beef, fat and candles will be eaten in confinement; they will waste and not thrive on any but a fish diet: tallow passes pure and uninjured through them. Should the fish not be taken rightly in the mouth, it is not thrown up in the air and caught, as some have said, but is brought head to gullet by repeated small choppings of the bill; the instant the head is before the orifice of the throat the fish glides down like "clock-work." I had a poor blind shag all last winter till the end of last March, and though he was stone-blind he would never swallow even a strip of a flounder against the scales, but always turn it by repeated snaps till he got it the right way. They never tear a fish, or, as I have said before, hold it in the claws. Should the fish not slip down the gullet easily, it will be ejected to the bill again for another bolt, or shook about in the throat. When a fish is swallowed the head and throat are shaken, the latter making a purring sound; the fish are also stowed away by being pressed down with the head, the bird making many curious contortions of the neck. Any fish too big to swallow is rejected when the bird finds that such is the case; fish never are broken, but bolted entire. A fish from two to three inches in width can be swallowed by them, and an eel of two feet long is worked down by degrees entire; six full-sized herrings are managed at a time, the throat being capable of great distension. In their native element they are rarely found gorged, and never so much so as to be taken by the hand, as is written: at least for seven years among them in Dublin Bay I never saw a cormorant or shag to be caught with "chaff." I never saw them drink, though when annoyed they will dip the bill like the swan and goose. The throat and intestines are infested with *Ascarides*.

Cry.—The general cry is “gau gau,” in a hoarse key, indicating anger; for various causes it is sounded almost musically: one of the warning notes is “go a é.” The call is “crew a oop;” the first syllable vibrates the throat and is deep and guttural, the last two are wild and plaintive, and heard a mile or more off of a fine day. My experience of the shag is that it is solely a marine bird, and not to be met with after the waters of rivers lose their brackishness: the cormorant is quite the reverse. Thompson, in his ‘Natural History of Ireland,’ gives Irish instances of its occurrence inland. “I have been favoured,” says he, “by the Earl of Enniskillen with two specimens of the green cormorant, taken far inland on different occasions. One of them in the month of January, 1839 (?), and I think soon after the great hurricane, was captured alive near Swanlibar, in the county of Cavan, under Ben Eachlin, and nearly thirty English miles from the sea. The lad who caught the specimen stated that it was accompanied by four more birds of the same kind. It was quite strong and fed well on fish. On the 16th of September of that year, the other individual, an immature female, obtained near Florence Court, about twenty miles inland, was sent to me. I have very lately heard from the Rev. G. Robinson, who resides near Lough Neagh, that the green cormorant habitually frequents that great sheet of water, where he has not, however, seen more than two in company, or more than that number in one day; they were generally sunning themselves in some of the islands when observed.” The two first-mentioned examples were evidently driven inland by stress of weather. On Lough Neagh I have seen the cormorant, but not the shag, or, as it is termed, the green cormorant. Again, Thompson would lead his readers to consider the shag a scarce bird on the coast of Dublin:—“I have seen specimens which were killed in Dublin Bay, and was informed in 1837 (by Mr. H. H. Dombrain) that about the month of November or December, every year, six or seven of these birds appear near the Pigeon-House Battery there.” Mr. Dombrain had very little experience of the shag in Dublin Bay, evidently, for I can count the bird by twenties every day from October till March on the White Bank (just beside the Pigeon-House Fort), at the mouth of the Liffey, on the bar, on the shoals of Sutton, Baldoyle and Howth, and along all the coast from Howth to Dalkey. At any hour of the day they can be seen swimming or flying. What is more, for a good purpose, I have shot a dozen in a few hours, and will engage to do so again within rifle-shot of the Pigeon-House, and only get every fourth bird I see.

Nidification.—The shag begins to nest from late in April, though the greater part wait, I think, till the beginning of May. They always breed in marine stations, such as among the crevices or shelves of isolated rocks, islands and cliffs; but the darling spot is a cave into which the sea flows. They breed still on Lambay, though in diminished numbers, since English and Irish “egg grabbers” and “dealers” set their blighting feet upon it—men I have seen taking home basketfuls of eggs, for what? The nest is composed of seaweed and other floating rubbish, sometimes lined with grasses. The eggs are four, sometimes five, long and slender (they vary so much that measurements are useless), covered with a coat of a limy substance, pure white at first, but soon soiled; the egg itself is watery bluish or greenish. I should say the egg was nourishing; the white is very gelatinous when raw, the yelk flavoured like cod-liver oil, and most likely equally nutritious. The bird *does not sit erect* always, but horizontally on the eggs; the erect position I attributed to alarm, being thus ready to spring off. On land the bird walks well, though somewhat awkwardly, the foot being lifted high.

Plumages.—No. 1. The young when first excluded from the egg are devoid of feathers, except a few blackish hair-like things similar to goose-hairs; the skin is of a bluish black colour.

No. 2. After a few days the body is covered with a longish and greasy-feeling black or sooty down.

No. 3. Link 1. A mixture of No. 2: the down and the new feathers of first plumage.

No. 4. *First Plumage*, counted by me as the first summer. *Description: Upper Surface.*—From the base of bill along top of head and the neck brown, with a bronze gloss, *faintly green* in some lights; edges of the feathers cream-colour. Shoulders and scapulars dull brown, with a brown-bronze gloss; a green shade can be seen if looked for; a dark band at end of feather: in many individuals this band is *very indistinct*, and only seen in certain lights; the tip of the feather *broadly fringed* with cream-colour. Wing-coverts the same, but no band at tip. Back, rump, tail-coverts, sides and thighs bronze-brown, *fringed with tawny*. Quills and tail brownish black, outer filaments glossed with bronze. *Under Surface.*—Sides of neck and throat brown; edges *broad* and creamy white. Throat, breast and centre of belly *cream-white*; centres of some of the feathers of breast, and belly *pale brown*; sides of belly *pale brown*; the edges of the feathers *broad* and cream-colour. Chin and vent pure white. The centre of

the throat is encircled by a collar of pale brown-centred feathers three inches deep. Bare flesh about bill *lemon-yellow*. Irides *yellowish green*. Feet blackish and cream-colour. Bill quite as thick after October as in the adult. (Taken from a bird now in my own collection).

No. 5. Link 2. This plumage gradually fades till November, when the feathers rejuvenate or transmute. This family never moults on the back or breast, but the feathers grow, as it were, without dropping out. In youth the feathers wear out and revive again, but in the adult they never fade much. I have a beautiful specimen of the shag now before me, in second winter, showing transmutation beautifully and lucidly. The head, neck, quills, tail and some of the large scapulars moult, also the down of the entire body; but the feathers of the shoulders, back, scapulars, rump, wing-coverts, &c., the breast, sides, belly, &c., never, to my knowledge, fall from the bird. Before the transmutation to first winter plumage the feathers fade very much, the edges becoming very bleached, but soon the bleached ends drop off, the bronze of the feather richens, the band gets more distinct. On the under parts the brown centre of the feather encroaches on the cream-coloured tip. By the end of December and beginning of January the bird may be called in first winter plumage. (In collection birds of October and November, first year.)

No. 6. *First Winter: Upper Surface*.—From the base of bill, along head and down neck dark bronze-brown, with a *real green* gloss; tips pale brown. Shoulders and scapulars bronze-brown, with still an undecided green gloss; the bar along edges of feather rather distinct; edges lightly fringed with pale brown. Back, rump, sides and thighs deep bronze, with a *strong olive-green tail*. Wing-coverts as in first summer. Sides of head, neck and throat a mixture of *green* and brown feathers, all tipped with pale brown. *Under Surface*.—Chin always and the vent in most cases pure white. The throat, breast and the centre of belly of a *burnt-umber* colour; the fringe pale, inclining to cream-colour. Sides of belly *deep hair-brown*, lighter edges. Eye-ball *pea-green*. Bare flesh at bill colour of a *ripe lemon*. Feathers scanty before eye. The collar on throat is darker and very distinct. (From a bird in collection shot early in January). A diagnosis here will be unnecessary; the italics will distinguish first summer and first winter. The dark brown of the under parts alone is a sufficient distinction. In life the two plumages not coming together cannot be confounded.

No. 7. Link 3. From the middle or latter end of January another transmutation begins. It is very gradual, extending to May and sometimes further. It is only on the upper surface of the body. The feather now, when fully transmuted, is similar to that of the adult; but, unlike the adults, it is perishable. A description is useless; it is merely a mixture of first winter plumage, half transmuted feathers, and those fully turned, which, as I said, are as the adults. The under parts as in first winter. (In collection a bird in March).

No. 8. *Second Summer. One year old.*—June. The whole of the upper parts have transmuted, and generally a good many of the wing-coverts. They are now unlike the beautiful rich adult feathers they were when first revived, but are still unlike any other stage, for though brownish they are of a good rich green; some have a slight fringe of brown. When flying the old worn coverts have a very faded look. Feet still the same cream-colour and black. Under parts still as in first winter. Naturally this stage cannot be confounded with any other. In collections the date is sufficient. It assimilates slightly with the second winter in December, but may be known from that stage by the under parts containing none of the dark feathers assumed at that time.

No. 9. *The Second Autumn.*—Is a faded addition of second summer. A bird in October is—*Upper Surface.* From base of bill along top of head and neck bronze-brown, with a *dark green gloss*; some have and some have not the pale tippings. Shoulders and scapulars bronze-brown; the *green gloss and the band* at end of feather now *distinct*; edge of feather well fringed with tawny. Back, rump, sides and thighs bronze-brown, with a *rich green gloss*. Wing-coverts nearly as in first winter. Sides of neck brown, the feathers worn *small and lance-shaped*, sometimes mixed with blackish green feathers. *Under Surface.*—Chin white; vent cream-colour; throat, breast and belly as in first winter, except that the feathers have become *lance-shaped* on the breast and throat, and that the collar is scarcely definable from the breast. Bare flesh at bill *orange-yellow*. Eye *pea-green*. Feet still the same. *Diagnosis.*—The italics distinguish this stage from that of first plumage, the only stage it could be confounded with in nature. It is something like first winter, but the two stages do not occur together, so it cannot be confused while in nature: in a collection the date is sufficient. By most authors this bird is thought the young of the year, and the great similarity in the under parts must have caused this error. The bright greenish bronze of the upper parts,

the real lance-shape of the upper feathers, and the very distinct band at end tells it at once from first winter in the cabinet. The lance-shape of the breast and throat-feathers is also a distinguishing mark. (In collection, October).

No. 10. *Link 4.* A mixture of second autumn, and the new transmuted feathers, which are similar to those of the adult. This transmutation begins in November and extends to February. Cannot be confounded with any other stage, as the *under feathers also turn and become like the adult.* Two birds in collection, shot on the 28th of November, have the back and under parts dotted with new feathers.

No. 11. In December the under parts are like those of the white-fronted goose.

No. 12. Two birds shot the end of January, 1866, have the upper surface almost as in the adult. Some of the scapulars and wing-coverts show the transmutation beautifully; some feathers have only as yet taken the perfect shape; others have the dark band, but are still bronze; others are the rifle-green of the adult, with perhaps still a light fringe or a tuft of brown at tip, which has yet to fall off, while the greater part are adult. The sides of the throat are still mixed with brown. Chin white, black feathers cropping through. Back, rump, sides and thighs as in the adult. Under parts various shades of brown; great numbers of the feathers as in the adult. Irides rich green. Feet still the same. Flesh at bill deep orange. (In collection).

No. 13. *Second Spring.* May.—Very similar to the adult. May be known from it by the pale feet, the orange flesh at bill and frequently a little white about chin. It has no crest.

No. 14. *Third Summer.* July.—Very similar to the adult. Feet still distinguish it by their pale colour, the quantity of yellow at base of bill, by its having no crest, and also by the faded though still perfect plumage of the adult. It does not breed at this age. This is considered the adult by many, and all authors I have read. Hence we read that the adult's plumage fades by the summer sun, and that the crest is lost after laying.

No. 15. The plumage revives again in the autumn, and by October the bird is in—

No. 16. *Third Winter.*—Exactly similar to the adult, but still crestless.

No. 17. In the beginning of January the crest appears sprouting, and by May the bird is most probably nesting. It is at all events in

full adult dress by February, after almost three years of immaturity. (In collection, crest sprouting, January).

No. 18. *Adult Dress, taken from a bird shot January 26th, 1866.*—Bill, upper mandibles blackish, at base tortoise-shell; under mandibles all tortoise-shell. Flesh under eye orange; at base of under mandibles black, dotted with little warts of an orange colour. Eye intense dark green. Feet grayish black. Head, neck, throat, back and rump dark lustrous green. Shoulders, scapulars and wing-coverts dark green; a band of velvet black borders end of feathers; a beautiful golden lustre pervades the whole feather. Under parts rich bronze-green. Tail and wing-quills black; the outer filaments and also the large scapulars and tertials glossed with bronze-green. On the head is a crest of recurved green-black feathers, about two inches high. In this specimen they are well worn and not new.

It is said that the shag loses the top-knot in winter and the end of summer. The birds from which these observations have been made must have been the young in third winter. That the crest is worn in December I can state from experience: I cannot state now positively that it is not lost after the young are hatched. It is certainly lost in autumn for a time, a new one coming by moult. The only difference I can see in the adult dress in spring from that of winter is a number of white hair-like feathers with a little tuft at tip, coming out in the neck, in spring. They have seemingly been unobserved before. Adult dress never fades.

This ends my account of the shag. I have determined this summer, if possible, to procure all the summer plumages from the breeding-stations; I shall then be happy to show the stages I have written to any ornithologist who will give me a call. Other years I neglected getting or preserving shags in summer, being occupied on other subjects.

The next letter I write you on this family will be on the cormorant; to be followed by one on the Natural History of the brownheaded gull (*Larus ridibundus*), and an account of all its plumages, with some questions about what is the masked gull (*L. capistratus*).

HARRY BLAKE-KNOX.

Dalkey, County Dublin,
April, 1866.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from Zool. S. S. 217.)

APRIL, 1866.

Common Gull.—After the heavy rains during the first week in April large flocks of these gulls came daily to feed on the grass-marshes, in company with rooks and starlings. It is rather an unusual occurrence in this neighbourhood to see them thus feeding so near the Humber, as their habit is to forage far inland on the high wold district, often going from twenty to thirty miles from the sea. During the winter flocks of these birds may be daily seen passing over in the early morning to their distant feeding-grounds, returning to the Humber from three to five o'clock in the afternoon. These flocks usually fly in the shape of a V: in windy weather low, and in still calm weather at a great height. The greater portion of these gulls which frequent the Humber during the winter season are adult birds.

Snipe.—In answer to the inquiry of Mr. Jeffery (S. S. 166), it is not unusual for a wounded snipe to throw itself into the position he describes—namely, the tail spread out like a fan and held at right angles to the body. This practice is also common to other of the waders, and I have always thought that this peculiar posture on the part of a wounded bird was merely an indication of extreme disapproval at the unfortunate position in which it found itself placed. Wounded birds of many species, on the approach of their captor, at once throw themselves into a defensive attitude; and the snipe will thus naturally assume the most formidable appearance it is capable of.

Starling.—On the approach of spring, and before breaking up into pairs for the breeding-season, the congregated thousands of these birds exhibit unusual activity; they delight in keeping long together on the wing, going through the most marvellous aerial performances. The evolutions of a large flock of starlings over our marsh district, at this season, is always a most interesting sight. It is extraordinary with what precision the whole flock will instantaneously turn,—now to left, now to right,—every bird wheeling exactly at the same moment, as if by word of command. They have often the appearance, in the distance, of a towering column of smoke, waving slowly backwards

and forwards as it gradually advances; the next moment perhaps this column will contract into a spherical body, looking like a gigantic ball—no sooner seen than it vanishes altogether, as the birds change their line of flight, reappearing again as suddenly as they had vanished, and again rising into the tall soaring column, quickly again to contract and spread out from each flank into a long thin line, like a body of skirmishers. It is only, however, in the spring, and before the breaking up of the flocks, that starlings attempt these complicated manœuvres, their evolutions during the remainder of the year, when retiring to roost, &c., falling far short of these their vernal performances. Few of our common English birds are so thoroughly insectivorous as the starling. I never open them without finding insect remains in their stomachs: at this season it is no unusual occurrence, in our marsh district, to see a flock broken up into small parties in close attendance on the sheep, moving round them as they lie on the grass, and jerking out from their wool the “fags,” which, attracted by the warm sun, are crawling on the surface, thus making a sort of “happy hunting ground” of the sheep’s back, performing the same kind service which travellers say the little “beef-eaters” do for the cattle of South and Western Africa.

Mountain Finch.—A very beautiful specimen of this finch, a male in mature plumage, was this day (April 10th) forwarded to me by a friend. It was killed in the neighbouring parish of Barnoldby-le-Beck, and, curiously enough, shot by mistake; a man shot a stock dove in his stack-yard, and on picking it up found this bird lying a few yards beyond in the line of fire.

Golden Plover.—April 10th. Observed three of these birds feeding in company with peewits in the grass-marshes: they had nearly acquired the full summer dress: the few gray plovers on the flats do not as yet show any signs of a change of plumage. I have remarked that golden plovers, as a rule, assume the black under parts weeks before the gray plovers show any signs of a change.

Gray Plover.—These birds have a habit, when taking flight and when alighting, of throwing up their wings over the back, showing the black axillary plume; they may readily be distinguished by this when at a considerable distance, as the black feathers show very plainly against the white ground of the under parts.

Dates of Arrival of Summer Migrants in North Lincolnshire in April.—April 4. Wheatear; 5. Tree Pipit; 11. Chiffchaff Warbler; 14. Chimney Swallow; 16. Cuckoo; 18. Willow Warbler and Yellow

Wagtail; 19. Lesser Whitethroat; 25. Whinchat; 29. Nest of young thrushes flown.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire.

April 30, 1866.

Ornithological Notes from Norfolk. By HENRY STEVENSON, Esq.

(Continued from S. S. 87.)

JANUARY TO MARCH, 1866.

THE extreme mildness of the past winter accounts for the scarcity of fowl at any time on our coast, or of the rarer specimens which, in sharp weather, are not unfrequently met with. Even the frost and snow which occurred at intervals during January and February were of too short duration to have any material influence, although the cold was severe whilst it lasted, and the gunners on Breydon as well as on the flat shores of the Wash, concur with the keepers of the few decoys still worked in this district, as to the blank nature of the past season. The only particular feature, perhaps, worthy of note, has been the appearance in some numbers, both in Norfolk and Suffolk, of roughlegged and common buzzards, with a few fine peregrines.

Longtailed Duck.—An immature female was sent me from Salt-house, on the 6th of January, which confirms my previous experience that these birds occur at times in mild winters when least expected, and are often altogether absent in the hardest weather.

Quail.—An adult female was taken at Salthouse on the 6th of January, and about the same time a singularly small and dark variety on Mousehold Heath, near Norwich. This curious-looking bird presented the same peculiarities as are said to distinguish the small dark varieties of the common partridge occasionally met with in heathery districts. The whole of the ground colour of the plumage, commonly of a pale brownish yellow, were in this bird sooty gray, particularly noticeable on the chin and throat; the usual light streaks also pervading the feathers of the back and sides, forming two parallel lines on either side of the shafts, were in this instance dark gray, with the shafts of each feather pure white.

Blacktailed Godwit.—A single specimen shot on Breydon, on the 10th of January.

Common Bittern.—Two fine specimens exhibited in our fish-market, one on the 10th of February and another on the 2nd of March.

Hawfinch.—An adult female killed at Hempnall, on the 12th of February, and another at Mulbarton; a small flock were also seen in a garden at Thorpe about the same time.

Spotted Crake.—A female, forward in egg, was killed at Ludham, on the 23rd of March.

Waxwing.—A friend of mine residing at Thorpe, near Norwich, informs me that, some time in the middle of March, he watched one of these beautiful but most uncertain visitants in his garden, and having a good glass was quite sure of its identity. We have had only chance stragglers now for several years in this district.

Hobby.—An adult female was shot at Belagh, about the 3rd of March, an early date for this summer migrant.

Sparrowhawk.—Another beautiful little red male was killed about the middle of March, at Fardenhall, where the one mentioned in my previous notes was procured.

Great Northern Diver.—About the end of March a fine specimen, apparently, by the size and colour of its beak an adult bird, was shot on Surlingham Broad. The throat and under parts are pure white, and the back gray, but each feather having two shades of colour. No white spots of any kind.

Snipe, both common and jack, were tolerably plentiful on their return northwards, towards the end of March, but none appeared in our market after the 31st of March: fowl extremely scarce, but several fine male shovellers were killed in different parts of the county.

Note.—Nightingale first heard, April 14th; cuckoo on the 11th; swallows on the 12th: all near Norwich.

APRIL AND MAY, 1866.

In spite of the prevalence of N.E. winds, and the unusual severity of the weather throughout the past month, and even May commencing with frosty nights and hail and sleet by day, our summer visitants have arrived about their usual time. The cuckoo was heard by the 11th of April, swallows were seen on the 12th, and the nightingale was in full song by the 14th, being all of them rather early than late for this county; but I cannot say that I set much value upon statistics of "first arrivals," unless the recorder has unusual opportunities for out-door observation, and has kept a register of such facts during several successive seasons. It by no means follows that the "first swallow" of any correspondent is the earliest arrival, and in such cold springs as we have just experienced our tuneful warblers creep into the groves and

hedges, and give no certain indication of their presence till the first bright morning tempts them into song. House martins seem very scarce this season, and the marked diminution in their numbers of late years is more easily perceived than accounted for. The extreme dryness of the last few summers has rendered the building process more than usually difficult, and here, from the lack of other moisture, the birds avail themselves of the passage to and fro of the water-carts near the city to collect mud from the freshly sprinkled roads. The extreme heat also and the absence of rain have rendered the nests extremely brittle, and many a luckless brood has fallen with the *débris* of their little nurseries. It is probable, however, that the chief cause of their scarcity may be attributed to the diminution of insect food, through the extensive drainage which, on all sides, has altered, and is still altering, the whole face of the country. As yet (May 8th) the martins have not commenced their parental duties,—indeed have scarcely visited their old haunts,—but in sportive flights and feasting have spent their days upon the various streams and the rich meadow lands adjacent. Both swallows and martins have, however, suffered much from the unusual severity of the weather, and a friend whose garden joins the river, but within the city boundaries, informs me that on one occasion he observed numbers of them settled on the grass in an extremely weak state, others clinging to the bark of the trees, and in every action showing the effect which so inclement a season has upon these delicate creatures. Blackcap and garden warblers are rather more common than usual in this neighbourhood, and the willow wren, always abundant, is particularly plentiful. One which frequents a lofty willow near my garden sings incessantly the day through, and year after year the same tree attracts this species, and not improbably the same bird. I have heard and seen the nightjar once or twice, but have not yet noticed any swifts. Nightingales abound in all their usual haunts, and in spite of the cold biting winds have been heard constantly by night and day. Of rare occurrences the following are most worthy of note:—

Common Linnet.—On the 10th of April a curious variety was brought me alive by a bird-catcher, having much white about the head, a perfect saddle of pure white across the back, and the breast prettily mottled with white and red.

Hoopoe.—But one of these ill-fated wanderers has been slaughtered here this spring, which was killed about the 19th of April. When will people learn to know that, however strange in plumage, this is not a *rara avis*.

Terns.—A very beautiful specimen of the arctic tern, the under parts deeply suffused with the usual smoke-gray tint, was killed on the 14th of April, and several black terns were shot on Breydon about the same time.

Velvet Scoter.—A female for sale in our fish-market on the 7th of April.

Puffin.—An immature bird, with a particularly small and ungrooved beak, was killed at Blakeney about the first week in April.

Eared Grebe.—An example of this rare species was killed at Breydon on the 10th of April (the same as recorded in the 'Field' of April 21st). The yellow plumelets on the sides of the head were tolerably pure, but the throat and chin were still much mottled with white, but the bird would have attained its full plumage, probably, in another week or two.

Great Crested Grebe.—No less than eight magnificent great crested grebes, just returned to the Broads from the sea-coast, were, I am sorry to say, brought to a birdstuffer in this city for ladies' plumes, and sold for a shilling each. When will the votaries of fashion listen to reason, and not exterminate a species for the mere whim of the moment? Kingfishers and even the beautiful little grass parroquets have been in great demand this winter—for hats!

Brambling.—These birds have been extremely scarce this last winter, though so remarkably plentiful the year before. The great abundance of beech-mast in 1864 was, I believe, a great attraction, which has been almost equally wanting in the past autumn. A male brambling in my aviary, which I have had over three years, has commenced (April 24th) its usual migratory call-note,—a shrill whistle or chirp, which is uttered every night at intervals from about 8 P.M. till near daylight, the bird becoming extremely wakeful, and with raised crest and fluttering wings indicating its excited condition. The least noise or a passing light near the cage sets him off at once, and on moonlight nights he calls incessantly; and this, as I have remarked during several seasons and with different individuals, goes on till the beginning of June, when it ceases altogether.

Rook.—A curious variety, killed at Ranworth about the beginning of May, having the back, wings and tail silvery gray, and the head and under surface of the plumage dull grayish black. Young rooks not yet out of the nests (May 8th), except a few very early ones, which are able to take care of themselves.

Turtle Dove.—On the 6th of May I found a flock of at least two

dozen frequenting a rye stubble not yet ploughed in. These, I imagine, were a migratory flight resting on their passage, as I never before met with so many together in the spring of the year, although several pairs remain to breed during the summer.

Spoonbill.—A fine old male, which had been seen about Breydon for nearly a fortnight, was shot on the 2nd of May, and had a rich band of buff across the breast, but the crest not much elongated. The throat contained three or four three-spined sticklebacks, quite perfect, and the stomach was filled with the remains of others, mixed with sand and silt from its last feeding-ground.

Whimbrel.—Were killed at Blakeney on the 1st of May, and is known there as the "May bird."

Bartailed Godwit.—Appeared on Breydon on the 7th. The 12th of May is known amongst Yarmouth gunners as "godwit day," as they are then commonly seen on the "muds," especially with a S.W. wind and drizzling rain.

H. STEVENSON.

Norwich, May 8, 1866.

Ornithological Notes from West Sussex.

By W. JEFFERY, jun., Esq.

(Continued from S. S. 168).

MARCH, 1866.

Gray Wagtail.—March 14. Saw a gray wagtail, in which the change in plumage had just commenced, a few black feathers showing on the throat about the base of the bill. This species usually leave us about the end of the month.

Common Bunting.—Have seen nothing of the common bunting throughout the winter until the middle of March; about this time a few appeared, and by the end of the month they were, true to their name, common. They may now be seen almost all the day on the topmost twig of a hedge, on a clod of earth, or some other eminence, uttering their "tic-tic-tic-tic." &c., &c. This song, if it can be so called, not being heard in winter, is perhaps a frequent cause of a bird so inconspicuous in colour being overlooked. Their only note in winter is a single "tit" or "tit-tit," uttered generally while the bird is on the wing. Still the only conclusion that one can arrive at is that they emigrate from here as the winter comes on, either to some locality

where a suitable food is more abundant, or to a warmer climate. That they do not all leave this country in the winter is pretty certain, since they are not unfrequently found on the coast during severe frost; but are not these birds from more northern parts? The common bunting is very rarely met with in the Weald of Sussex.

Grebes.—About the middle of March I was shown two heads of the great crested and two of the Slavonian grebe, recently killed birds. The skins, of course, cut up for ornaments.

Wood pigeons remain in flock as late as the end of March. Red-wings and siskins seen up to the 17th. Chiff-chaff first seen on the 30th; wheatear on the 31st.

APRIL, 1866.

Arrival of Immigrants.—In the following list of immigrants I have given the earliest dates of arrivals that I have been able to ascertain with certainty:—

April 4th. Willow Warbler.

„ 5th. Wryneck and Blackcap.

„ 9th. Swallow and Cuckoo.

„ 10th. Ray's Wagtail.

„ 12th. Tree Pipit and Nightingale.

„ 16th. Grasshopper Warbler.

„ 17th. Sedge Warbler, Common Whitethroat and House Martin.

„ 18th. Wood Warbler.

„ 19th. Whinchat.

„ 28th. Redbacked Shrike, Swift and Common Sandpiper.

It is much easier to register, with tolerable accuracy, the dates of arrivals than those of the departures, the arrivals in spring more especially. The greater part of the spring immigrants are in full song when they come over, and their voices having been silent to us for several months are sure to attract the especial attention of the ornithologist the first time they are heard after that lapse of time. After all, however, it is, as Mr. Blake-Knox remarks (S. S. 220), “another may have seen (or heard) it before”: and of this I have taken advantage, giving dates earlier than my own, whenever I have felt that I could rely on the information received from others. The cuckoo's first appearance is earlier this year than I have ever noticed it before, and I rather hesitated on giving a date so early as the 9th, but the person who told me of it was positive, and I have since read in the ‘Field’ that it was

heard in Essex on the same day, and near Southampton one day earlier.

Meadow Pipit and Linnet.—Meadow pipits numerous about the first week in April, and small parties of the common linnet seen for some weeks past; frequently observed passing in a northerly direction.

Moorhen.—A brood of young moorhens was hatched on the 1st of April. The nest was in a pit at the back of a cottage, where a pair of moorhens nested last year. The present tenants of the pit, both old and young, come regularly to feed with some fowls just by, and the old birds do not hesitate to "pitch into" the fowls if they interfere with them in any way. On the 23rd this pair of birds had completed another nest and deposited a second lot of eggs.

Shorteared Owl.—April 11th. Saw, at Chichester, a shorteared owl, in the flesh, which had been killed in the neighbourhood a few days before.

Lesser Spotted Woodpecker.—April 11th. A pair, male and female, were killed in Oakwood, near here, about the above date. The crown of the head, in the female, was white, with just a tinge of red about it, forehead brownish.

Garganey.—April 11th. A pair of these handsome little ducks killed near Selsey: they are now in my collection. A male in the Chichester Museum was killed in the same month, April, some years ago. It is a scarce bird in Sussex.

Gulls.—April 11th. Saw thirteen large gulls, flying N.E., in the evening: could not see enough of them to distinguish the species, but the plumage appeared to be gray.

Ring Ouzel.—April 12th to 20th. A few of these birds have been obtained during the migration. As a rule, they are not nearly so numerous, nor so frequently met with here, at this time of the year as in the autumn.

Black Tern.—April 14th. About this time the black tern appeared on the coast, and about some ponds several miles inland, even in close proximity to the city of Chichester. Whenever I have previously met with this species in the spring, it has been in the month of May. The stomach of a female, killed at Birdham, contained fourteen or fifteen full-sized shrimps.

Redthroated Diver.—On the 16th of April I saw, in the flesh, a redthroated diver in full summer plumage. It was killed a day or two before in Emsworth Harbour, on the western border of

Sussex; not a feather corresponding with the winter plumage remaining.

Longtailed Tit.—Both old birds roost in the nest at night. I had known where there was a nest constructing, and, thinking that I had allowed time enough for the full number of eggs to be laid, I visited it on the evening of the 21st, for the purpose of taking the eggs for my collection. Having turned out *both* birds, I was obliged to dislodge the nest, which was built between two large branches of an ash-tree, before I could get out the eggs. Finding only five I replaced the nest as well as I could, that the birds might use it again if they cared to do so. Passing the same way about a week after, I ascended the tree to ascertain if they had taken to it again, when I found the hole stopped, but five more eggs in the nest, and these eggs *stained*. I imagine that I must have disturbed the *waterproofing* of the nest, where it joined the tree, when I displaced it, and so caused the birds to forsake, and the eggs to be stained, and that the birds stopped the entrance before leaving.

Waders.—I have not had opportunity to note down arrivals correctly, but up to the end of April, whimbrel, bartailed godwit, green-shank, redshank and gray plover have arrived.

W. JEFFERY, JUN.

Ratham, Chichester, May 10, 1866.

Hen Harrier near Barnstaple.—It becomes a melancholy duty to chronicle the capture and death of birds which, once common, are now fast disappearing from our Avifauna, being each year surely and effectually "improved" from off the face of our country. On Easter-day I received a fine example of the adult male hen harrier from Sir Arthur Chichester, which had been trapped by one of his keepers near Barnstaple. This species used to be no uncommon bird in the West of England, breeding among the furze on many a high-ground and moor; but it is now becoming rare, and can only be looked upon as an occasional straggler.—*Murray A. Mathew; Weston-super-Mare, May 4, 1866.*

Woodchat Shrike and Golden Oriole at Brighton.—I and my brother have been successful in shooting two very rare birds in one day, namely, the 4th of May; the first, a woodchat shrike, was seen by my brother at Preston, near Brighton; on his first observing it, it was on the ground: as soon as it observed him it flew into a thorn-bush, where he very quickly shot it, and found it to be a fine male. He had not walked more than two hundred yards farther when he met with a pair of golden orioles, sporting about upon the lawn of Preston Place: as they were on private ground he immediately came home with the news: I at once went to the house, and having obtained permission of the owner to search his grounds I succeeded, after some

hours' manœuvring, in shooting the male: the female at once disappeared, and has not been seen there since.—*John Pratt*; 44, *Ship Street, Brighton, May 8, 1866.*

Golden Oriole at East Grinstead, Sussex.—A male specimen of the golden oriole was picked up dead, lying on its back with outstretched wings, near East Grinstead, Sussex, on Monday last, the 14th of May. — *William May*; *East Grinstead, May 17, 1866.*

Golden Oriole in Suffolk.—I have just examined an adult female of this handsome species, which was killed about the 3rd of May, at Chedistone, near Halesworth. The plumage is of the usual yellowish green tint, with the tail-feathers broadly edged with yellow. In the stomach I found the hard portions of some large berry, part of a caterpillar and the abdominal parts of a good-sized humble bee.—*Henry Stevenson*; *Norwich, May 8, 1866.*

Golden Oriole at St. Just.—Yesterday a specimen of the golden oriole, in fine plumage, was observed throughout the day in the Vicarage-grounds of St. Just; the Rev. G. Hadow reported the fact to me, and he informs me that a magpie made a furious onslaught on the bird and drove it off; it returned however, afterwards, and seemed inclined to adopt the locality of the garden, the only suitable covert for its nidification in the parish, for its residence. Mr. Hadow informed me that he heard the cuckoo on the 7th, and this leads me to note a few dates of the arrival and song of our summer visitants up to this morning, at this place and at Trebartha, in the east of the county:—

April 20. Willow Wren sings.

„ 21. Blackcap and Cuckoo sings.

„ 24. Tree Pipit and Wood Wren (Trebartha) sing; Gray Wagtails paired; Sand Martin appeared; Spotted Woodpecker chirping.

„ 25. Dipper paired.

„ 27. Corn Crake heard; Whitethroat; Grasshopper Warbler.

„ 28. Sedge Warbler.—*Edward Hearle Rodd*; *Penzance, April 27, 1866.*

Nesting of the Dipper.—The dipper is a common bird on the upper portions of the River Lynher, where several mountain torrents contribute to the stream. I observed several pairs in the last week, and they were busily engaged in their nidification. I thought they were much earlier in their nursery pursuits, but probably they have sympathized with the general and extraordinary backwardness of the spring. I found two localities of their breeding, this year, one under a bridge spanning the river, and the other a covered drain conveying a large stream from a pond: my nephew writes me word that he watched the bridge after I left for home, and soon observed a dipper alight with a piece of moss: after remaining a few minutes it perched on a stone in the river under the bridge, and flew up under the centre pier, and as quickly as a wagtail darts up after a fly; it flew off almost immediately after a few bobs of the tail on the same stone. My nephew very soon took to the river to examine the locality, and at the top of the pier, under the centre of the bridge, there were three nests of this year's building, two in a rudimentary state and the third approaching completion, but evidently only recently begun, as it was composed of a mass of water-weeds and wet grass—a regular wet podge, in fact. The under part of the nest was nearly finished, and the dome commenced, but not lined; the other two nests were dry, but fresh, and the fact of the floods of the past winter having reached to the floor of the bridge is a clear proof of these would-be nests being the “sport” of this year, as they

must have been washed away if last year's nests. It appears, therefore, that these birds, like the wren, make several attempts to build before completing their perfect and final nests, for apparently sport and amusement. Dippers do not altogether confine themselves to streams, for I observed them fly across from one tributary to another with a strong, rapid flight.—*Edward Hearte Rodd; Penzance, May 2, 1866.*

Dates of the Nightingale's Arrival at Woolpit, Suffolk.—Seeing you are desirous of hearing the time when the nightingale arrives, I take the liberty of sending you the following notes, as taken from an old note-book:—

| | |
|----------------------------|-----------------|
| 1850. April 11. | 1858. ——— |
| 1851. „ 20. | 1859. April 24. |
| 1852. „ 14. | 1860. „ 30. |
| 1853. „ 23. | 1861. „ 22. |
| 1854. ——— | 1862. „ 20. |
| 1855. April 21 (doubtful). | 1863. ——— |
| 1855. „ 29 (distinctly). | 1864. April 17. |
| 1856. „ 21. | 1865. „ 16. |
| 1857. „ 19. | |

The nightingale has not yet (April 15th) been noticed, but on Saturday the cuckoo was heard.—*T. G. Tuck; Tosdock House, Woolpit, Suffolk.*

Richard's Pipit obtained in Leadenhall Market.—I obtained a remarkably fine specimen of this rare bird from among a number of larks in Leadenhall Market, on the 8th of March last: it is now preserved, and in my collection.—*William Machin.*

Eggs of the Longtailed Titmouse and Goldcrest in one Nest.—A nest of the long-tailed tit was brought me a few days since containing thirteen eggs, nine of which evidently belonged to the owners of the nest; these were quite fresh-laid: the remaining four I identified as those of the goldencrested wren; they were slightly sat upon. These latter were much smaller and of a darker hue, with a band of dull reddish brown circling the larger end, while the former were spotted with pale red spots, more particularly around the larger end. The eggs of the goldcrest were placed at the bottom of the nest, with the others arranged around. The only explanation I can give is that, after the little architects had constructed and prepared their abode, they had apparently, from some cause or other, left it, and the nest was then taken possession of by the goldcrests, who commenced laying their eggs, but were driven off by the return of the former occupants, who resumed their allotted duty without expelling the offspring of the intruders. Is such an event probable? Has the goldcrest ever been known to lay its eggs in the nests of other species, without taking the trouble of constructing a home for itself?—*T. E. Gunn; 3, West Potterygate, Norwich, May 5, 1866.*

Chaffinch in a Hen's Nest.—Yesterday a lady friend of mine, on going to look at her chickens, was surprised at seeing a dark tail sticking out from under the hen (which, by the way, was a Cochin), and to her astonishment, when the hen got up, out flew a chaffinch. This is the first time I have heard of a small bird doing such a thing. Could it have gone there for food, warmth or building materials?—*E. D. Hamel; Bole Hull, Tamworth, May 16, 1866.*

Effects of Cold on the House Martin.—Messrs. Shephard and Whitears, in their 'Catalogue of the Birds of Norfolk and Suffolk,' say, "On the mornings of the 5th and 6th of June, 1816, the gardeners (at the residence of the Rev. Mr. Fonneréau, of

Christchurch, Ipswich) could have taken up hundreds of these birds (swallows) in their hands. They were collected in knots, and sat on the grass in parcels of thirty and forty. This, there is reason to believe, was owing both to cold and hunger. * * * The same summer, house martins were found dead on the ground in Norfolk, and others were so weak that the cats sprang on and caught them as they flew near the ground. A pair of these birds, which had completed a nest under the eaves of our house, were found dead in it, before any eggs were laid. From the above circumstance, birds of this kind were unusually scarce throughout the summer."—*H. Stevenson; May 14, 1866.*

Ortolan Bunting in Kent.—On the 10th of April I saw here (Cobham, Kent) a bunting, which, in my opinion and in that of the Editor of the 'Field,' was undoubtedly *Emberiza hortulana*. It was sitting on an elder bush near a large pond, and remained there for some minutes. I at once distinguished it by its green head.—*Clifton; Cobham Hall, Kent, May 2, 1866.*

An ancient Raven.—I yesterday saw the largest and most ancient raven I have yet beheld. For years past Brean Down has been frequented by a pair of ravens, whose depredations every spring upon the neighbouring lambs have been a great grievance to the farmers upon the flat under the Down. Nobody could get within shot of the birds; no one could get at their nest; no trap, however artfully baited, could ensnare them. The other day a man observed one of the birds alight on a spot to which he could creep without the birds either winding him or seeing him, and as he had a gun in his hands, he at once attempted to get within shot, and succeeded in slaying one of the terrors of the surrounding farms. He carried the bird about in triumph from farm to farm, receiving gratuities and as much beer and cider as he cared to drink from all the farmers, who were most delighted to see such a trophy, and then took it into the birdstuffer of this place to have it stuffed. Looking in upon my friend the birdstuffer yesterday afternoon, I beheld this formidable thief and tyrant. The stuffer told me he measured six feet from wing to wing, but I can hardly credit this measurement. The bird gave me the appearance of an immense age. He was nearly twice the size of any raven I had before seen. The long wiry hackles of his neck were of a gray-black. His beak was indeed a tremendous weapon. One powerful blow of it could have broken a man's fore-arm, and how easily must it have split the skull of many an unhappy lamb or rabbit: it was indeed a veritable pick-axe. And then you should have seen the fellow's stalwart legs, his powerful feet, and the rich and glossy black of his back, wings and belly. I never saw such a realization of a bird of evil. Very likely it was the same bird who, just ten years ago, presented me involuntarily with a fine specimen of the common buzzard's egg. One May day I was walking on the "sidlings" of Brean Down, when, turning a corner of the cliff, I came suddenly upon a raven, perched some twenty or thirty yards above me, with some white object in his beak. Startled by my appearance the bird made hastily off, and left his booty behind him. I managed to climb to the spot and found there a perfectly fresh egg of the common buzzard, with just the hole in it made by the tip of the raven's beak, as he had flown with it from the nest, and that how many miles away? Perhaps this very raven may have been the bird now exhibited in the birdstuffer's shop. There have been a pair of ravens, and but one pair, on the Down from time immemorial. Doubtless the survivor will procure another mate.—*Murray A. Mathew; Weston-super-Mare. [Communicated by Mr. J. E. Harting.]*

Bee-eater near Bristol.—I have to record the occurrence of this beautiful and rare visitor, four specimens having been shot in this neighbourhood during the present week, three of which are in my possession. The birds, when first observed, were hawking for bees round a number of fruit trees in blossom, and in the neighbourhood of a number of bee-hives. Their flight is most graceful and beautiful; at one time soaring in graceful circles at a great height, and darting with great velocity after their prey, which was often apparently some of the largest species of *Bombus*: when one of these was caught it would be carried at the point of the bill for a half minute or more, and then, with a sudden and peculiar turn of the head and neck, the insect would be swallowed entire: I noticed this repeatedly. At other times the birds would sit upon some dead branches of a large elm and of a cherry tree, and make short excursions after bees that might be flying past or gathering round the fruit flowers, sometimes returning to the same perch again, like the flycatcher, but oftener, circling round for a short time before settling again. The bees appear to be always swallowed while the bird is on the wing.—*George Harding, jun. ; Stapleton, near Bristol, May 5, 1866.*

Variety of the Great Spotted Woodpecker.—On the 23rd and 25th of April two examples, male and female, of the great spotted woodpecker were killed at Worlingham, near Beccles, in Suffolk: both were adult birds. The female was rather peculiarly marked, by having about one-third part of each wing extending to the tips, of a pale reddish brown; tips of the tail-feathers of the same colour; a patch of chestnut hue was also visible on the back part of its head, as also a similar patch just above its rump. This is the only instance of variation in the plumage of this species that has passed under my notice. I have frequently observed examples of the green woodpecker (*Picus viridis*) having this reddish brown or rusty hue on the tips of the wings and tail: an example of this variety I have now in my possession, obtained for me by a friend near Wymondham, two or three years since. What cause may be assigned for this abnormal change of plumage? Is it due to the weakness of the birds or to old age? Both the above were adult birds.—*T. E. Gunn.*

Singular Death of a Kingfisher.—An adult specimen of the kingfisher was picked up dead on the bank of a stream in this neighbourhood, on the 16th of February last, it having met with its death by the following singular incident:—In attempting to swallow one of its funny captures, a specimen of the “miller’s-thumb” (as the fish is familiarly called here), one of the projecting spines of one side of its gill, being extended, caught under the tongue of the bird, and being unable to extricate itself from its unpleasant morsel, fell a victim to its own rapacity. They were both preserved in the position in which they were found by one of our birdstuffers, and are in the possession of a gentleman in this neighbourhood.—*Id.*

Whimbrel at the Kingsbury Reservoir.—It may interest some of the readers of the ‘Zoologist’ to know that, two days ago, I shot a fine male whimbrel (*Numenius phaeopus*) at the Kingsbury Reservoir. It was quite alone, and I searched in vain for another of its species. Length from tip of bill to end of tail $17\frac{1}{2}$ inches; length of bill $3\frac{1}{4}$ inches; extent of wings $28\frac{1}{2}$ inches. Both it and a common sandpiper, which I shot at the same time, smell very fishy.—*Charles B. Wharton; Willesden, Middlesex, May 12, 1866.*

Hard Fate of a Woodcock.—Some time ago a flock of woodcocks passed over this town on a dark night, and one of them struck against the vane of one of our churches, and was impaled on the arrow by his neck.—*Arthur Pye Smith; Ipswich.*

Lesser Tern and Black Tern at Weston-super-Mare.—Terns and divers are always rare visitors to our muddy sea, whose waters are too thick for them to fish in, and it was therefore quite a surprise to me this morning to see the lesser tern and black tern in the fishmonger's shop, in company with some whimbrel. I purchased five examples of each species of tern in full adult plumage. They had been shot near this town the day before.—*Murray A. Mathew; Weston-super-Mare, May 4, 1866.*

Black Tern in Somersetshire.—There have been several black terns seen in the marsh this year, especially in the neighbourhood of Sedgmoor: I have heard of as many as thirty being seen at one time. I saw two specimens at Mrs. Turle's, the birdstuffer, at Taunton, on the 14th of April, and two more on the 28th, which latter are now in my collection. All four were in full summer plumage, and had been killed on Sedgmoor a few days before I saw them.—*Cecil Smith; Lydeard House, May 7, 1866.*

Whiting taken in Mackerel Drift-nets.—On two consecutive nights this week a solitary full-sized whiting has been taken in the mackerel drift-nets close up to the corks. The oldest fisherman in the Bay does not recollect such an occurrence before. It shows that, for some reason or other, whiting sometimes swim close to the surface.—*Thomas Cornish; Penzance, April 21, 1866.*

Tadpole Fish in Mount's Bay.—I had brought to me last week a specimen of the trifurcated halle or tadpole fish, of which I noted the occurrence of three specimens in the Bay in 1864. This specimen was a small one, 6 $\frac{1}{4}$ inches over all. Noticeable as affording presumptive evidence that the fish breeds somewhere in the Bay.—*Id.; May 14, 1866.*

Habits of the Common Crab (Carcinus mænas).—I have only just observed an interesting note by Mr. Parfitt, in your January number (S. S. 8), on the longevity of the *Carcinus mænas* when kept out of water. I can add something on the subject of its habits. On the 3rd of March, 1862, I was present when the River Stour above Julian's Bridge, at Wimborne, Dorsetshire, was netted. The water fished was twelve miles above all tidal influence, and between it and the sea were four complete weirs and two rolling bays. There was no salt water nearer than Poole Harbour, which is distant four or five miles at least in the straight line. I then saw caught, and myself removed from the net, an adult specimen of *Carcinus mænas*. I carried it in my pocket, wrapped up in a glove, for about two hours, and then placed it in cotton-wool in an ordinary chip-box, with some cray-fish caught at the same time, and I sent the lot by post to the late Mr. R. Q. Couch, of this place. He received them twenty-six hours after their capture, and about twenty-four hours after they had been wrapped in cotton-wool. The two cray-fish were dead, but the *Carcinus mænas* was alive, and, recognizing the species, but never dreaming that it came from fresh water, he at once plunged it into his salt-water vivarium, where it very shortly died. I noted these facts to the 'Field,' in my annual fish list, published on the 7th of March, 1863, and curiously enough found my statement challenged, on the authority of something Mr. Couch had written previously to the occurrence of the incident above named.—*Thomas Cornish.*

A Glance at a few Facts connected with Alpine Entomology.

By ALBERT MÜLLER, Esq.

“It would be well if the collector of insects would devote at least a tithe of his energies to the speculative branch of his subject.”—WOLLASTON, *Variation of Species*, 1856, p. 113.

SCARCELY a decennium has elapsed since Mr. Wollaston enunciated the above opinion, and few, if any, zoologists to whom the real advancement of their science lies at heart, will be found who would not gladly concur in the desirability of granting at least a limited sphere of speculative action to fellow-labourers in their own fruitful field, especially when reminded of what, for instance, geologists and botanists have accomplished in the same line; and if from any branch of Zoology, more than from another, it is from the study of the Insecta that we may confidently expect a rich harvest of facts bearing on most of the important questions so eagerly discussed at the present time, such as that of the Origin of Species, or, to select another, the distribution of living creatures over the earth's surface.

Various more or less plausible theories, although not yet too many, relating to these questions, have successively occupied almost everybody's attention, and even entomologists, than whom no other class of naturalists has been slower in filling the ranks of theorists, have at last been compelled to take, though grudgingly, their share in the general inquiry after “more light” on the above and other subjects of minor importance. But, to judge from certain criticisms lately published in the ‘*Zoologist*’ (S. S. 153), entomologists as a body, especially younger ones, seem already to have become such reckless speculators with the arguments at their command, and their deductions seem to be so crude and ill considered, as to merit unlimited disapprobation; at least, we are led to believe in such a state of things when we read the review of the ‘*Coleoptera Atlantidum*,’ where the entomologists of to-day are charged with “reaching conclusions without passing through the slow process of reasoning.”

As it seems to me that this assertion does more particularly point to those who dare to advance opinions, without being at the time prepared with sufficient evidence to support them on all sides, it may not be out of place to call the impartial reader's attention to what Mr. Wollaston has already predicted in the work quoted above, when he says, “Certain it is that much would probably be advanced, at first,

on slender premises, and would, as a consequence, fall to the ground, leaving no record behind it. Yet such must inevitably be the case at the outset in every region of inquiry; and we are prepared to expect it. It does not, however, follow that good would not be developed also, whilst we are confident of the fact that unless the trial be made it cannot possibly arise." (*Op. cit.* p. 113.)

This trial is still going on around us, and far from condemning its present unsightly features, we ought to hail it as the forerunner of a more universal spirit of inquiry amongst entomologists, which, once awakened, will soon find means to build its hypotheses on safer ground than can possibly be done at the present time. Meanwhile let us have patience, and not daunt by word or deed those of the younger school, who have, if not yet the knowledge, at least the good will to set to work in earnest, even at the risk of showing their shortcomings, when discussing questions, difficult even to the experienced amongst us.

I would fain have abstained from offering any comment on this subject, and indeed, were it not for the obvious reason that the following notes will, by the very nature of the topics touched upon, pretty nearly come under the head of speculations, I should not have expressed my views on a point which, however, has no doubt given some slight concern to more than one of the younger friends of Entomology.

But let us proceed to a more attractive subject than the foregoing.

In the midst of the European continent rises the mighty chain of the Alps, presenting everywhere its bold contours, and very indifferent indeed must the traveller be whom the sight does not tempt to linger in the neighbourhood of at least one of its snow-clad peaks. But let him possess the feelings of the lover of Nature, and allow him to roam through the valleys in their bosom, let him ascend to the higher pastures or wearily wade through snow-fields, let him cross a glacier or feast his eyes on the scenery around, and mark his expressions of joyous surprise—how new and unknown everything. Nor will a longer stay alter this opinion, for his daily walks will, on the contrary, confirm his first impression that even a lifetime would not be sufficient to get even a superficial knowledge of all the wonders he encounters at each step.

It is more particularly to the observer of insects that this truth is continually brought home, for when watching his little favourites for any length of time it is a source of constant attacks on his knowledge of their habits, as acquired by observation in lowlands, to see the total

change in all the phases of insect life, brought about by the difference of external, especially climatical agencies. Species which elsewhere pass through their whole metamorphoses in one season, adapt themselves here to a series of such, more so in the *subnival* and *nival* regions, as if to prevent any wholesale waste of life, so often suddenly imperilled by changes in the weather. An Almighty hand has wisely provided that eggs, larvæ or pupæ will stand the severity of not only one but often several winters, before progressing to the next stage; but should an unusually fine and mild summer come on, a few weeks will further them more than entire seasons; imagos will come forth and enjoy the congenial sunshine, where, for years past, no sign of such could be detected; the yellowish grass plots on the upper mountain-ridges, now converted into green lawns, are, as it were, teeming with life, until a cold blast, or the lateness of the season restores to them the dreary dead look they bore for years before.

Nay, in this land of wonders even death seems to come sometimes in a peculiar form: all of us have read how the sharp, excessive cold of the snow region tempts man to give way to the sleep from which there is no awakening, and if we are to believe the testimony of those people whose lives have been saved, for instance, by the humane monks of the Great St. Bernard, there is something indescribably sweet in being thus lulled into eternal repose. The privilege of easy dying in the regions of eternal snow does, however, not seem to be restricted to man alone; at least some remarks further on seem to imply that insects, too, are in certain cases exempt from the terrors usually accompanying death; but, to state the case plainly, I must beg of the reader to reconsider the following facts:—

“At the meeting of the Entomological Society of London, held on the 3rd of April, 1865, the President, Mr. F. P. Pascoe, read the following note:—‘Last July, when passing over the snow-fields on the top of Monte Moro, at an elevation of about 8000 feet, I noticed here and there a sharply-defined cylindrical hole in the snow, such as might have been caused by pressing a wine-cork into it. These holes were generally about an inch in depth, and at the bottom of each was either a small lump that looked like peat, or more frequently an insect, invariably either Dipterous or Ichneumonideous. I cannot account for the lumps of peat, but I imagine that the insects settling on the snow became torpid from its low temperature, and sank gradually (or perhaps rapidly) into it, the hole being caused by the radiation of heat from the insect. The solar rays on mountain summits are asserted to

be warmer than those falling on the plains, but there is no doubt that the radiation from solid bodies at great elevations is very marked.' In reply to inquiries, the President added that the insects in the snow were all dark in colour, that the holes were on the slope of the mountain on which the sun was shining directly, and that they were truly cylindrical, not hemispherical or narrowed at the bottom. His explanation of the phenomenon did not meet with general acceptance; it was objected that radiation was scarcely likely to produce a cylindrical excavation, and Mr. A. R. Wallace doubted whether an insect of so small bulk and mass, and which could only give off by radiation the heat which it had first absorbed, was capable, even though of dark colour, of absorbing sufficient to produce the considerable melting of the snow around it which the President had described." (Zool. 9556).

Alpine Entomology has not yet enjoyed so much patronage as its more lucky sister-science, Alpine Botany, and as anything bearing on obscure points must, in a collected form, ever be welcome to future inquirers, I have not hesitated to repeat the above note *in extenso*; for the same reason, I think myself justified in adding the following more precise particulars, kindly furnished by Mr. Pascoe, to whom I beg to tender my sincere thanks.

This gentleman informs me that the date was the 7th of July, 1864, and he then continues, "I crossed the pass alone, and as it was nearly five o'clock P. M., before I got to the summit, I passed over the snow-fields as rapidly as my excessive fatigue permitted. The snow at that late hour was very soft, and, as you will easily understand, I did not devote so much attention to the 'small holes' as I should have otherwise done. I, however, did not say, the holes were 'numerous;' they were, *probably*. I saw about twenty, perhaps more. They occurred *chiefly* at about the stiffest part of the ascent, some 500 feet or so below the summit, which is said to be 8386 feet above the sea. All the insects I saw were Ichneumonidæ or Diptera, all limp and moist. I see on reference to my notes that I have mentioned a few Ephemæræ. As this was not repeated in my note read at the meeting, I suspect that I must have thought they had not been sufficiently made out at the time. Naturally very delicate, they might under the circumstances have been rather *guessed at* than satisfactorily determined. With regard to the holes in the snow, my first impression that they looked as if caused by a wine-cork being pressed half-way down into it again occurs to me as giving the most exact idea of their size and appearance, perhaps a trifle smaller, and, to be particular, a fresh cork,

and not one that the wine has bloated with years of contact, was in my mind's eye. There were no dead insects to be seen lying on the snow; the only one I saw lying on it was still living: I suspect that these insects are only tempted to make such a lofty flight in the early morning, say nine o'clock A. M., and once on it, they are soon benumbed and then sink rapidly; some may have been in these holes for days, for at a certain depth, the insects being beyond the influence of the sun's rays, radiation would cease and they would go no lower: I may remind you also that plants and stones sufficiently near the surface erect for themselves hollows in the snow somewhat similar. Some of the large blocks of stone I saw with a kind of fosse, at least three feet deep, around them, and in their neighbourhood the snow was very soft and yielding. The time had been very hot and dry,—I think for weeks; and the slopes had a more or less northerly aspect, and were exposed to the sun until five o'clock P. M."

Having given full particulars of these valuable observations I now append the translation of a passage occurring in F. von Tschudi's 'Thierleben der Alpenwelt,' 1861, p. 465, which is intimately connected with Mr. Pascoe's investigations and my above remarks about dying in the snow region. F. von Tschudi says:—"Winged insects, which are often carried by the wind to the upper snow-fields, will sink into these sometimes two feet deep, and it has been observed *that these creatures settle voluntarily on the 'firn,'** extending their wings and limbs, and that they rest in this position at their ease without moving, it being probable that *they enjoy the absorption of the oxygen of the 'firn.'* If they are taken up and removed to a stone or a piece of wood, they will at once proceed to the 'firn,' where they extend themselves as if inebriated, and gradually sink in (seemingly) in full enjoyment. Dug out of a depth of two feet, they sometimes get lively again very quickly; otherwise, if left to themselves, they soon perish and at once get decomposed, and then the sinking in will cease. It has been tried to place dead insects on the 'firn,' when the body was found to swell up to a soft mass, then to shrink very much and afterwards to decay, after this the firn closed itself over it, which does not easily happen with living insects."

* "Firn" is used to designate that peculiar state of snow, when the individual hard grains are firmly cemented together by an icy substance. A higher temperature will loosen this cement, without affecting the hard grains, and they will then readily separate, but at night they are again freezing together to a compact mass.—*Tschudi.*

Here, then, we seem to have the reason of the insects settling on the snow; in full enjoyment of life's most precious gift they drink the cup of death without tasting its bitterness, and, whether agreeing or not with the opinion that insects voluntarily settle on the snow to absorb more oxygen, there will, I think, be no dissenting voice as to the singularity of this mode of dying.

The lumps of peat found in several of the holes are no doubt the sediment of the decayed bodies of these insects, perhaps increased in size by dust or fine sand, so often carried by heavy gales, not only over short distances or heights, but, according to the celebrated investigations of Professor Ehrenberg, over oceans and whole continents: in our case the dust was probably brought by the southern wind called "sirrocco" in Italy, and "föhn" in Switzerland, which is known to carry very often a considerable quantity of fine particles of both organic and inorganic matter.

With regard to the holes in question, I see no sufficient grounds why they should not have been formed by the radiation of heat from the bodies of the insects, as a dark object, however small, will necessarily become the momentary receptacle of much warmth when placed on a white surface; and, to enlarge upon Mr. Pascoe's hint about plants and stones imbedded in the snow, I have only to remind the reader how, on fine afternoons in winter, every individual blade of grass sufficiently near the surface of the snow pierces it and forms, if not a hole, at least a marked, regular depression around itself, and how much larger is the surface of even a middle-sized insect than the tip of a blade of grass.

However, far from considering this last or any other point of the present case as being quite settled, I would, on the contrary, most urgently request tourists, especially members of the Alpine Club, to chronicle such phenomena as the above whenever they are met with; though seemingly of no importance when considered as isolated facts, they may hereafter be of much value to the student of Alpine Zoology in connection with other sciences.

Should occurrences similar to those mentioned in this article be noticed again, I would suggest that a few of the following queries, should, if possible, be answered:—

At what altitude the observation took place.

The direction of the wind.

The state of the sky, whether clouded or bright.

What aspect.

To what orders the insects belong; or better, to carry away as many specimens as possible for future quiet examination.

To bring away some of the so-called peat, if such be again observed in similar holes.

And, as a general rule, to take nothing for granted, but to examine thoroughly.

The field of Alpine Entomology is as yet scarcely touched, and its wide extension calls for dilligent workers. Will no one enlist in this good cause?

May 15, 1866.

ALBERT MÜLLER.

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

May 7, 1866.—W. W. SAUNDERS, Esq., V.-P., in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—‘Proceedings of the Royal Society,’ No. 82; presented by the Society. ‘Journal of the Linnean Society,’ Vol. ix. Zool. No. 33; by the Society. ‘Journal of the Royal Agricultural Society,’ 2nd Series, Vol. ii. Part 1; by the Society. ‘Tijdschrift voor Entomologie,’ Vol. viii. Parts 5, 6; 2nd Series, Vol. i. Parts 1, 2; by the Entomological Society of the Netherlands. ‘Stettiner Entomologische Zeitung,’ 1866, Nos. 4—6; by the Entomological Society of Stettin. ‘Die Neuroptera des Lithographischen Schiefers in Bayern,’ Part 1; by the Author, Dr. Hagen. ‘Synopsis des Agrionines, 5e légion: Agrion;’ by the Author, M. E. de Selys-Longchamps. ‘The Zoologist’ for May; by the Editor. ‘The Entomologist’s Monthly Magazine’ for May; by the Editors. Wood’s ‘Illustrations of the Linnæan Genera of Insects,’ 2 vols.; Rennie’s ‘Conspectus of the Butterflies and Moths found in Britain;’ Yeats’ ‘Institutions of Entomology;’ Martyn’s ‘English Entomologist;’ Marsham’s ‘Entomologia Britannica;’ Hüber, ‘Recherches sur les Mœurs des Fourmis indigènes;’ Schrank, ‘Enumeratio Insectorum Austriæ indigenorum;’ Duméril, ‘Considérations générales sur la Classe des Insectes;’ Sulzer, ‘Die Kennzeichen der Insekten;’ Klug, ‘Monographia Siricum Germaniæ;’ Barbut, ‘The Genera Insectorum of Linnæus;’ Schæffer, ‘Elementa Entomologica;’ by J. W. Dunning.

Election of Members.

Philip Green, Esq., of 11, Finsbury Circus, and W. Stavenhagen Jones, Esq., of 79½, Gracechurch Street, were severally ballotted for and elected Members.

Exhibitions, &c.

Mr. M'Lachlan exhibited some galls found on ground-ivy at Lewisham, supposed to be those produced by *Aylax Glechomæ*; these are, however, described as occurring singly, while those exhibited were in a cluster of four.

Mr. Bond exhibited a finely-marked variety of the female of *Cabera exanthemaria*, bred by the Rev. Mr. Horton, of Powick, near Worcester.

Mr. Newman sent for exhibition some larvæ of *Hepialus lupulinus* found in a heap of wet clay amongst the under-ground rhizomes of the common coltsfoot (*Tussilago farfara*), at Henlow, near Biggleswade, in April last: these larvæ were all dead, and remarkable as forming the pabulum of a fungus, probably a *Sphæria*, occupying the whole interior, and sending out its mycelia in all directions through the skin, while in some specimens a stout capitate column rose from the neck of the larva immediately behind the head, evidently the fructification of the fungus. This singular formation is figured in 'The Entomologist,' vol. iii. p. 75.

Mr. Stainton exhibited some Dipterous larvæ he had that morning received from Mr. Borthwick, Treasurer of the Natural History Society of Alloa: these larvæ were reported to be very injurious to the young wheat, destroying the main stem just above the root.

Mr. Saunders observed that some similar larvæ had been brought under his notice by one of his neighbours in Surrey, but that if the larvæ attacked the wheat when very young the result was simply the destruction of the main stem, and the plant put out an additional quantity of other stems, and no more injury was done to the crop than by pasturing sheep upon wheat when getting too luxuriant early in the season.

Mr. Stainton exhibited a number of drawings, made by Miss Wing, of the Micro-Lepidopterous larvæ he had collected during March in the South of France, at Cannes and Mentone, including *Acrolepia Smilaxella* of Millière, of which the larva fed on the leaves of the *Smilax aspera*; *Hyponomeuta egregiellus*, *Duponchel*, which fed on the *Erica scoparia*; a *Gelechia* (probably *G. biguttella*), bred from *Dorycnium suffruticosum* and *D. hirtum*; *Coleophora congeriella*, *Staudinger*, on *D. suffruticosum*; a green *Depressaria* larva on *Genista spinosa*, which, instead of producing a novelty, had yielded only *D. atomella*; *Gelechia Psoralella* of Millière on *Psoralea bituminosa*; an *Elachista* larva mining down a leaf of *Carex*, just as it might have been doing in England at the same period of the year; larvæ of the insect so injurious to the olives, and which Herr Kaltenbach, of Aix-la-Chapelle, had last year first correctly referred to the genus *Prays*, *Prays oleellus* being evidently, both in form, structure and even in marking, closely allied to *Prays Curtisellus*, whilst there was a great similarity in the habits of the larvæ, that of *P. Curtisellus* being as destructive to the shoots of the ash as that of *P. oleellus* to the shoots of the olive; also a drawing of a true gall formed on the shoots of *Gypsophila saxifraga* by a small Lepidopterous larva (probably of the genus *Gelechia*, but which had not yet been bred). Mr. Stainton observed that the only other instance of a true gall formed by a Lepidopterous larva was that formed by *Asychna æratella* on *Polygonum aviculare*.

Mr. Stainton also exhibited a drawing of a larva found on spindle in his own garden at Lewisham, the habits of which were very peculiar, inasmuch as these larvæ were found only where there was a bundle of the "frass" of last year's larvæ of *Hyponomeuta Evonymellus* resting on the twigs of the spindle; but wherever there was such a mixture of web and excrement left on the plant, one of these larvæ was to be found underneath feeding on the bark and even eating the wood of the spindle. The appearance and agility of the larva reminded him much of the genus *Gelechia*; and already were there three instances known in that genus ('Intelligencer,' Vol. vii.

p. 157) of larvæ which were only found as companions of other larvæ. The beauty and neatness of the drawing of Miss Wing elicited very general admiration.

Mr. E. W. Janson exhibited specimens of *Throscus elateroides*, Heer, a species not hitherto recognized as an inhabitant of Britain, captured, during the past month, by Messrs. J. A. Brewer and E. Smith, near Rochester, Kent, at the roots of herbage: he remarked that this species may be readily distinguished from its ascertained indigenous congeners by its bi-carinate forehead, grooved eyes and the thickly punctate interstices of the elytra, and submitted magnified drawings and the following concise diagnoses of the three species now known to inhabit Britain: he likewise stated that Dr. J. A. Power had recently taken this species in the same locality and under similar circumstances:—

“Genus *THROSCUS*.

I. Eyes with an oblique central groove in front only.

Sp. 1. *T. dermestoides*, L., Latr., Steph., Heer, Redtb., v. Kiesenw., de Bonv.
(*Elater dermestoides*, L.)

Forehead with two distinct parallel longitudinal ridges in front between the eyes, and a very short indistinct one between them.

Thorax scarcely perceptibly dilated at the sides in front of the posterior angles, finely and somewhat thickly punctate.

Elytra punctate-striate, all the striæ distinct; the interstices with two irregular series of sparsely disposed punctures anteriorly, which gradually assume the position of a simple row posteriorly.

II. Eyes with an oblique central groove running completely across them.

Sp. 2. *T. elateroides*, Heer, de Bonv.

Forehead with two fine parallel longitudinal ridges in front between the eyes.

Thorax conspicuously dilated at the sides in front of the posterior angles, finely and rather thickly punctate.

Elytra finely punctate-striate, the striæ next the suture obsolete; the interstices thickly and finely punctate.

The frontal ridges are, in some individuals, so faintly raised as to be distinguishable only in a good light and in thoroughly clean specimens.

Sp. 3. *T. obtusus*, Curt., Steph., v. Kiesenw., de Bonv.

Forehead convex, scarcely perceptibly punctate, and without the faintest trace of longitudinal ridges.

Thorax very short, and very much dilated at the sides in front of the posterior angles, sparsely punctate.

Elytra finely punctate-striate, the striæ next the suture usually very faint; the interstices somewhat thickly minutely punctate.”

Mr. Saunders exhibited a singular conical nidus, which he considered to be that of a spider, from New South Wales, formed out of a single leaf, by a series of folds, so artfully contrived that the whole of the leaf was used up in its construction,

producing a tent-like structure quite impervious to wet; the nidus was about half an inch in length and nearly the same in diameter at the base.

Mr. Saunders also exhibited two cases formed by the larvæ of some species of *Æceticus* (*Oiketicus*)?, about two inches in length, constructed of four series of small pieces of the culm of some kind of grass; these four series were of different lengths, increasing as the larvæ appear to have grown larger and required a more roomy habitation: in each series the pieces of culm were very nearly equal in size and length, and so arranged as to form a cylinder. These cases had somewhat the shape of a pocket-telescope drawn out to its full length: they were from New South Wales.

Mr. E. L. Layard said that he had obtained several species of these insects at the Cape, in Australia, and also in Ceylon; he had observed that the young larvæ when first hatched constructed their cases from the body of their parent: in one species the case of the larva when full grown was composed externally of sticks, much larger than the case itself, placed lengthwise, and this ornamentation was not added until the insect was full grown.

Mr. McLachlan observed that the fact of young larvæ of case-bearing species employing the body and case of the female parent, as materials for their own cases, had been noticed by Réaumur; and he had himself seen it done by our British species of *Fumea*.

Mr. Haward exhibited some Coleoptera and other insects of various orders from Natal.

Mr. E. L. Layard called the attention of the Society to the fearful ravages of a species of white ant at St. Helena: it is a small slender species, having very long jaws, and he believed specifically distinct from any which he had seen in Ceylon or at the Cape of Good Hope; it was introduced into the island about twenty years ago, in timber from the West Coast of Africa, but its ravages had only become serious within the last ten years; at the present time James Town might be said to be devastated by it, the whole of the cathedral was destroyed, and indeed everything in the town made of wood was more or less injured; the library was also destroyed by them, and it was noticed that the theological works were eaten first, which he (Mr. L.) attributed less to the fact that the insects studied divinity, than to these books not being so often consulted by the reading public as novels and lighter works, and the insects therefore less disturbed in their work of destruction. Teak seemed to be the only wood they did not eat, but they would freely bore holes through it in order to get at other kinds more suited to their tastes: this fact had been proved, by placing a deal plank between two pieces of teak, when the latter were perforated and the deal devoured. They might even be said to make their way through tin cases, for in the Government stores it was found that their moist frass on the outside of such cases caused rapid oxidization of the metal, which enabled the insects to make their way in and devour the contents. He believed that unless some effectual remedy could be provided it would ere long be impossible to use timber on the island for any purpose; any one who could suggest such means would confer a vast benefit on the inhabitants. The ravages of the insect were at present confined to James Town, but might spread all over the island at any moment, and even reach vessels in the roadstead in firewood, or by other means, and be carried to the Cape, Ascension or elsewhere: it was a subject for serious consideration; the injuries already done to the Government buildings, &c., would necessitate an outlay from the public purse of many thousand pounds.

The Secretary mentioned that in December, 1863, a communication had been addressed to him by the Secretary of the Admiralty, with reference to the depredations committed at James Town by the white ants. See 'Proceedings' 1863, p. clxxxv. Mr. Bates, Mr. Wallace, and the late General Hearsey had subsequently addressed to him various practical suggestions, the whole of which were incorporated in a letter which on the 2nd of February, 1864, he had forwarded for the information of the Lords Commissioners of the Admiralty.

Mr. Layard also remarked that at the Cape of Good Hope wild bees were exceedingly abundant, and as the natives appeared to be quite indifferent to the stings of these insects, they dug up the nests and consumed the honey with perfect impunity: in the plains the nests were usually found in those of the white ants, which had previously been ravaged by the anteater, in the hills, in holes and caverns. He had always understood that the cause of the swarming of bees was want of room in the hive or nest; he had, however, noticed that in the caverns above mentioned the nests threw off swarms, and want of room could not be the cause in those cases.

Mr. Tegetmeier observed that the Scotch plan of providing additional room, by placing a box hive containing a strong stock between two empty ones, usually prevented the swarming in this country, the bees availing themselves of the increased accommodation instead.

Mr. Layard said that both this and Nutt's system had been tried by himself and Mr. Corless, the most experienced bee-master at the Cape, and had failed. Mr. Corless had lately constructed a hive in sections, so that each comb could be removed and examined with the bees *in situ*; they hoped on his return to be able to settle some vexed questions by the aid of this observatory, and their observations should be communicated to the Society.

Papers read.

The Rev. Douglas C. Timins communicated a paper entitled "Notes of collecting at Hyères (Var)."

Mr. Desrignes sent a paper entitled "New British Ichneumonidæ," containing descriptions of 39 species of Gravenhorst's genus Tryphon.

New Part of 'Transactions.'

Tr. Ent. Soc. third series, vol. v. part 2, containing the Prize Essay "On Ailanthiculture" by Dr. Wallace, and being the second Part for 1866, was on the table.—*J. W. D.*

Description of Helix lamellata.—As I have never found a detailed description of this animal in print, I here give the characteristics of a specimen which I took alive a few days ago at Scarborough:—Body rather short, tapering behind, nearly white; back dotted with slate-gray, specks denser at the sides, and so forming two conspicuous but undefined gray lines reaching to the base of the tentacles. Upper tentacles long but tumid, slightly constricted near the middle, bluish gray, darkest at the base. Lower tentacles light gray, two-fifths of the upper ones in length; space between them white. Foot white, slender, obtusely pointed behind. The creature walks with a quick shambling gait, the shell rolling from side to side, as though the contractions took place on alternate sides of the foot. The effect on the shell is very

pretty in a strong light, causing the lamellations to flash with a silvery hue at each movement.—*Charles Ashford; Grove House, Tottenham.*

Xantho florida in Mount's Bay.—I took a fine specimen of *Xantho florida* in Mount's Bay, on the 12th of May, in about eight fathoms water. Well inshore the crab is not, as I read, reputed rare; but this is, nevertheless, the first specimen of it I have seen in Mount's Bay in the course of upwards of twelve years' acquaintance with the place.—*Thomas Cornish.*

Spider or Mouse.—In reply to Mr. Clogg's remarks (S. S. 106) possibly what I saw in the cave at Ilkley may have been the work of both spider and mouse: I cannot, however, think a spider was the principal agent. It may be difficult to set bounds to the appetite of a spider, but it is incredible that any British species could have so absolutely devoured hundreds of large *Noctuæ* as to leave no trace of their bodies; but, even granting the capacity of the spider, it is most improbable that such large numbers of *Noctuæ* should in the course of a few days have come within his reach by taking refuge in a recess, in which, although carefully searched on many subsequent occasions, I was never able to find a living moth. I say within a few days, for the freshness of the wings, and the fact that they all belonged to species on the wing at the time, was good evidence of their very recent death. The web was only about a foot square, and totally incompetent for the amount of work required by Mr. Clogg's explanation; there were enough wings in the corner of the cave to cover it three or four deep. Very few of the wings were under the web or near it at all; the principal deposit was fully two feet distant, nearer the entrance—just where a current of air would not deposit them, and in such a recess as one might suppose a mouse would select to dine in: what else he was doing when he came to grief in my trap I do not know, and Mr. Clogg does not suggest. Beyond the fact of having hung his web in a suspicious locality, there seems no case whatever against the spider, who, by the way, was not even seen, much less caught, like the mouse, and although executed first and tried afterwards, I still think the real culprit has suffered.—*Edwin Birchall; Bradford, May 16, 1866.*

A List of Birds observed at Sealkote, in the Punjaub.

By Major NORGATE.

SEEING in the 'Zoologist' that you state you would be glad to receive any communications about birds from any ornithologist, although not styling myself by that learned title, I send you a list of the birds found in the station and district in which I am at present a resident, and which I have the opportunity of observing; no inconsiderable number either, as you will perceive. I have always taken great interest in the study of birds and their habits, both at home and

in this country, and consequently feel a sympathetic interest in those who are fond of the study.

LIST OF BIRDS FOUND IN THE SEALKOTE DISTRICT, PUNJAUB.

- Tawny Eagle (*Aquila fusca*).
 Brown Vulture (*Vultur monachus*).
 Large Black Vulture (*Otogyps calvus*).
 Brahminee Kite (*Neophron percnopterus*).
 Kite (*Milvus indicus*). Sometimes called also the Brahminee kite.
 Merlin (*Falco æsalon*).
 Blue Harrier (*Circus cyaneus*).
 Kestrel (*Tinnunculus alaudarius*).
 Marsh Harrier (*Circus æruginosus*).
 Sparrow Hawk (*Accipiter nisus*).
 Large Brown Wood Owl (*Syrnium indranee*).
 Barn or White Owl (*Strix flammea*).
 Grass or Jungle Owl (*S. candida*).
 Brown Owlet (*Noctua perlineata*).
 Raven (*Corvus corax*).
 Black Crow (*C. corone*).
 Rook (*C. frugilegus*).
 Indian Crow (*C. indicus*).
 Jackdaw (*C. monedula*).
 Common Minah (*Acridotheres tristis*).
 Pied Minah (*Pastor roseus*).
 Brown Thrush (*Geocichla unicolor*).
 Starling (*Sturnus vulgaris*).
 Golden Oriole (*Oriolus aureus*).
 Chestnut-coloured Minah (*Acridotheres fuscus*).
 Indian Cuckoo, Korleah (*Cuculus niger*).
 Cuckoo (*C. canorus*).
 Blue Rock Pigeon (*Columba livia*).
 Tawny Dove.
 Ground Dove.
 Small Ground Dove.
 Alexandrian Parroquet (*Palæornis Alexandri*).
 Hill Parroquet (*P. torquatus*).
 Roseheaded Parroquet (*P. rosa*).
 Large Black and White Woodpecker (*Picus major*).
 Small Black and White Woodpecker (*P. cathphanus*).

- Crimson-breasted Barbet (*Xantholama indica*).
Wryneck (*Yunx torquilla*).
Wall Creeper (*Certhia muraria*).
Hoopoe (*Upupa nigripennis*).
Indian Jay, Roller (*Coracias indica*).
Black and White Shrike.
Small Black and White Shrike.
Large Chestnut-coloured Shrike (*L. erythronotus*).
Small Chestnut-coloured Shrike.
Common House Sparrow (*Passer domesticus*).
Jungle Sparrow (*P. pyrrhonotus*).
Goldfinch (*Carduelis caniceps*).
Gray Linnet.
Bier Bird (*Ploceus baya*).
Black Robin (*Thamnobia fulvata*).
Barwinged Robin (*Pratincola caprata*).
Magpie Robin (*Copsychus saularis*).
Redstart (*Ruticilla phænicura*).
Pied Flycatcher (*Erythrosterina macula*).
Black and Crimson Flycatcher.
Blue Flycatcher (*Cyornis unicolor*).
Black and Orange Flycatcher.
Black Flycatcher (*Hemichelidon fuliginosus*).
Larger Bee-eater (*Merops viridis*).
Chestnut-neck Bee-eater (*M. quinticolor*).
Small Green Bee-eater (*M. Philippensis*).
Rocket Bird.
Bulbull (*Pycnonotus pygmæus*).
Large Bulbull (*Hypsipetes psaroides*).
Willow Wren.
Yellow Willow Wren.
Snap Bill.
Ground Runner—Brown Bubbler (*Malacocircus griseus*).
Blue Titmouse (*Parus cinereus*).
Blackheaded Titmouse (*P. ater*).
Humming Bird (*Arachnechthra asiatica*).
House Martin (*Chelidon urbica*).
Gray Martin (*Cotyle sinensis*).
Chestnut-throat Martin (*Hirundo daurica*).
Small Swift (*Cypselus affinis*).

- Swallow (*Hirundo rustica*).
Nightjar (*Caprimulgus indicus*).
White Wagtail (*Motacilla alba*).
Yellow Wagtail (*M. sulphurea*).
Whinchat (*Saxicola rubetra*).
Wheatear (*Saxicola ænanthe*).
Sky Lark (*Alauda galgula*).
Ground Lark.
Grasshopper Lark.
Avidevat.
Black and White Fantail (*Leucocerra fusciventris*).
Corn Quail (*Tetrao coturnix*).
Rain Quail (*T. pluvialis*).
Bush Quail.
Button Quail (*T. parvissima*).
Adjutant (*Ardea gigantea*).
Sarrus Crane (*Grus Antigone*).
Koolung (*G. cinerea*).
Black Curlew or Ibis.
Grey Curlew (*Numenius arquata*).
Whimbrel (*N. phæopus*).
Indian Peewit (*Vanellus indicus*).
Gray Plover (*Squatarola cinerea*).
Chestnut Plover.
Snippet.
Redlegged Godwit (*Tringa cinclus*).
Greenlegged Godwit.
Heron (*Ardea major*).
Egret (*A. alba*).
Stilt Plover (*Charadrius himantopus*).
Paddy Bird.
Brown Heron (*Ardea flava*).
Full Snipe (*Scolopax gallinago*).
Painted Snipe (*S. picta*).
Jack Snipe (*S. gallinula*).
Small Bustard (*Otis parva*).
Pelican (*Pelicanus Onocrotalus*).
Gray Goose (*Anas Anser*).
Brahminee Duck (*A. rufa*).
Mallard (*A. boschas*).

Widgeon (*A. ferina*).
Pintailed Duck (*A. caudata*).
Smew (*Mergus albellus*).
Pintailed Teal (*Dendronessa caudacuta*).
Redeyed Duck.
Yelloweyed Duck (*Anas clangula*).
Redbill Duck (*A. rubila*).
Summer Teal (*Dendronessa sponsa*).
Merganser.
Goosander.
Chestnutheaded Duck.
Blackheaded Duck (*Anas nigra*).
Canvass-back Duck.
Shoveller (*A. clypeata*).
Teal (*A. crecca*).
Chinese Teal.
Spoonbill (*Platalea leucorodia*).
Common Coot.
Small Diver.
Small Waterhen.
Shag (*Plotus africanus*).
Blackheaded Tern.
Ashcoloured Tern.

W. NORGATE.

Sealkote, Punjaub, India.

Ornithological Notes from Shetland. By H. L. SAXBY, M.D.

(Continued from S. S. 215.)

MARCH, 1866.

Golden Plover.—The hard weather at the beginning of the month immediately brought the golden plovers from the hills. They are now abundant in most low grounds, and at night may be met with in ploughed fields and even in gardens.

Iceland Falcon.—Several examples of this rare species appeared early in the month, after a strong N.W. wind. On the 3rd a fisherman, who was shooting in the Island of Balta, observed one sitting upon a large stone, and, as it appeared quite careless of his presence, he walked up very leisurely and shot it. An hour afterwards he brought

it to me under the belief that his prize was a snowy owl. It was a female in very good condition—a little too good, indeed, for I experienced no small difficulty in separating the thick layers of fat from the skin. The crop was fully distended with small pieces of flesh, and in the stomach was a large mass of flesh and rabbits' fur, but, with the exception of a few pieces of ribs, there were no bones. The largest of the ova were the size of No. 8 shot. Some fur was still adhering to the claws of both feet. The following description was taken down immediately after the bird came into my possession, and before the skin was removed:—

| | | | | | | |
|-------------------------------|---|---|---|---|---|------------|
| Whole length | . | . | . | . | . | 26 inches. |
| Wing from carpal joint to tip | . | . | . | . | . | 16½ „ |
| Bill from front to tip | . | . | . | . | . | 1⅔ inch. |
| Tarsus | . | . | . | . | . | 2¼ inches. |
| Middle toe and its claw | . | . | . | . | . | 3½ „ |

Bill.—Cere and upper mandible very pale blue, the tip nearly black, the angular projection or “tooth” sharp and prominent; lower mandible nearly white, the anterior portion of its cutting edge brownish. A few days after death the bill begins to turn pink, and afterwards becomes reddish brown.

Iris nearly black; the bare skin surrounding the eye pale flesh-colour.

Head white, the central line of most of the feathers nearly black; these marks are smallest upon the sides of the head, and very few in number about the base of the bill.

Upper Surface.—Upper half of the back of the neck marked in the same manner as the top of the head, but with the streaks larger and of a browner hue; feathers of the lower half of the back of the neck, and also those covering the back itself, dark grayish brown, bordered with white, the concealed portions lighter in colour and patched with white, the shafts nearly black; upper tail-coverts and scapulars nearly the same as the parts just described, but the tail-coverts have the pale margins broader, and the white patches larger, and in the scapulars those nearest the tail have the white so far encroached upon by the brown as to cause an irregular barred appearance. Many of the feathers of the upper surface, especially those about the neck, have some portion of the white border tinged with brown.

Wings.—Second quill longest, its tip when the wing is closed reaching within three inches of the end of the tail; first quill half an

inch shorter than the third, first two slightly cut out near the end of the inner web: lesser coverts very similar to the back; greater coverts white, irregularly barred with light grayish brown; first primary white, marked with dark grayish brown upon each side of the shaft; towards the tip of the inner web the brown projects into the white in a slightly bar-like form; remaining primaries the same, but with the brown occupying more space, and that on the outer webs gradually becoming more distinctly spotted with white on those feathers nearest the body; in these the white has a faint rusty tinge; the tips of all white, narrowed on the outer ones, the shafts dark brown. Secondaries and tertials white, barred with grayish brown; *in some the bars are continuous across the feather, in others alternate*; under wing-coverts white, with a few long fine streaks of very dark brown.

Tail.—Upper surface of the shafts white towards the base, dark brown on the remaining part, the under surface white throughout the whole length; middle pair of feathers white, each with eleven bars of dark grayish brown, the one nearest the tip considerably lengthened out along the shaft; *on the feather belonging to the right side the bars are continuous, on the left one all are alternate except the two nearest the tip*; next feather on each side barred on the basal two-thirds of the outer web, and with some irregular brownish mottlings upon the outer edge; in the remaining feathers the bars become more and more reduced to spots, except in the outer one of each side, where they again become lengthened out, and show a disposition to spread across the inner web.

Under Surface.—Chin, throat and upper half of the front of the neck white; abdomen, under tail-coverts and under side of the tail also white; remainder of under surface white, with dark brown sagittiform spots, much elongated and few in number upon the sides, rather more numerous, shorter and paler on the middle of the breast, shortest and broadest on the lower part and sides of the neck and on the sides of the breast.

Legs and Feet.—Tibial feathers white, with a few dark brown streaks on the outer side; these feathers are so long that when the leg is stretched out in the same line with the body they reach beyond the insertion of the toes; tarsus bare posteriorly, covered with white feathers on two-thirds of its length anteriorly; feet and bare part of tarsus pale bluish gray (drying to pinkish brown); claws very dark horn-colour, but not black.

I have endeavoured to describe the above specimen as minutely as

possible, under the belief that the particulars may be of use to those ornithologists who feel interested as to the distinctions between *Falco islandicus* and *F. grœnlandicus*. My own experience in the matter is so slight as to be unworthy of notice, but I cannot avoid looking with some doubt upon the disposition of the bars as a guide, seeing that in the present example they are both continuous and alternate, not only in the same group of feathers, but even upon the same feather. I should be glad to learn more respecting the usual colours, at different ages, of the bill, feet and bare parts about the head. A much darker bird of the same species remained in this neighbourhood for some days, and I also saw a third, closely resembling the one above described, flying above some pigeons as they sat upon the corn stacks at Bunes. It wheeled about them for some time, as if endeavouring to make them take wing, occasionally making a sudden stoop, but never attempting to strike. The flight was exceedingly rapid; a few quickly repeated beats with the wings seemed to be all that was required to create an impetus sufficient to carry it for several hundred yards.

Golden Eagle.—Various reports, all more or less exaggerated, have reached me concerning an enormous bird which has been seen in the island of Balta during the last few weeks. Unfortunately I have been unable to visit the spot, but there can be no doubt that the bird is a golden eagle. It is said to have killed a great number of rabbits.

Turnstone.—Turnstones are now abundant. A few days ago I watched them pushing over with their bills large pieces of sea-weed, which had been left by the tide, and also removing pieces of shells and stones, in order to procure anything in the shape of food lying beneath.

Woodcock.—On the 14th I saw a woodcock crouching among the deep snow upon the Hill of Colvidale: I was within two paces of it before it took wing.

Ringed Plover.—On the same day I first heard the spring note of ringed plovers, and observed that the birds were pairing.

Wild Duck.—A male of this species, shot on the 16th, already had a few pale brownish feathers about the head and neck; hitherto I have never observed the commencement of the change of plumage earlier than the middle of May. The stomach contained sand, shells, sea-weed and potatoes; some of the latter were still whole, and one of them was a little more than an inch in diameter.

Redbreasted Merganser.—The flocks of redbreasted mergansers are slowly breaking up. At this season I very often observe solitary males

basking upon the rocks or in small quiet bays. The small flocks which now remain seem to be chiefly composed of adult females and last year's birds.

Oystercatcher.—On the 19th I saw the first oystercatcher upon the rocks off the south point of Baltasound. It seemed to be much fatigued, and remained near the same spot for two days, when other individuals arrived. The latter were comparatively fresh, having come with fine weather, but the first one reached the island in the middle of heavy rain and a gale from S.W.

Lapwing.—The arrival of the lapwings escaped my notice this year; however, on the 16th I saw several pairs at their breeding-grounds.

Peregrine Falcon.—Two peregrine falcons have been frequently seen in the Burrafirth Cliffs during the last fortnight, as if with the intention of breeding there. A man who took three eggs of this species near the same spot, a few years ago, states that he found them lying upon a narrow rocky ledge, without any nest. Last week I was walking across the wet meadows at Upsal, the lapwings mobbing me in their usual manner, when suddenly their cries ceased, and most of them flew off in a hurried manner, as though alarmed; immediately afterwards I saw a peregrine make a stoop at one of their number and miss it, the lapwing having risen to avoid the blow. The pursuer instantly changed his course, and appeared to have given up the chase, but he was only making the usual sweep in order to get above his victim, who had now performed a similar manœuvre, and was high in the air among his companions. Contrary to my expectation, the falcon passed among them without bestowing the smallest notice; then he soared high above, stooped at the same bird, missed as before, and describing a wide circle, made a third and equally unsuccessful attempt. After several repetitions of nearly the same scene, the only difference being that the flock had by this time left their persecuted friend to himself, the latter began to exhibit signs of fatigue: the falcon, making wide sweeps, ascended with comparatively little exertion, while the lapwing, although able to rise more perpendicularly, soon found to his cost that such a mode of flight was far too trying for long continuance; accordingly, like a bullied witness in a court of justice, he suddenly threw off all attempt to outmanœuvre, and too late sought safety in honest flight. Poor inexperienced fellow! the attempt to combat his skilled antagonist upon equal terms was now bringing down the reward of presumption. Down came the learned sergeant—I mean the peregrine: in a few brief moments the victim was dashed

to the earth, and I being no better than my fellow men, in my admiration of the skill of the victor, overlooked for a time the cruelty of the deed. Peregrines sometimes devour their prey upon the spot where it falls, but I think it is more usual to carry it away to some favourite mound or rock, so situated that no enemy can approach during the meal without being seen in time to prevent a surprise. Near one of these rocks, which had apparently been used as a feeding-place for many weeks, I discovered the remains of no less than ten species of birds, *viz.* golden plovers, ringed plovers, lapwings, curlews, puffins, wild ducks, purple sandpipers, common, herring and lesser blackbacked gulls.

Raven.—Ravens were seen working at a nearly finished nest on the 23rd.

Hooper.—On the morning of the 24th a gale from S.W. brought twenty-eight hoopers. They flew quite low, uttering their usual cries.

Heron.—Hérons are now leaving us. The rough weather and hard frosts have caused many deaths among them. Several have been picked up in a dying state far inland, and some days ago I found the remains of two upon the beach at Hammer.

Herring Gull.—Herring gulls began to pair about the end of the month.

Sky Lark.—Sky larks have been in full song during the whole of this month. Even the heaviest snow-storms have not been able to silence them.

Snow Bunting.—The snow buntings, although so abundant in February, nearly all left us as soon as the bad weather commenced.

HENRY L. SAXBY.

Baltasound, Shetland, March 31, 1866.

Ornithological Notes from North Lincolnshire.

By JOHN CORDEAUX, Esq.

(Continued from S. S. 260.)

MAY, 1866.

Whimbrel.—Very considerable flocks of these birds arrived in the Humber district on or about the 3rd of May, on which day I observed a flock of not less than two hundred fly over from the flats into the grass

marshes. I have before remarked in the 'Zoologist' that whimbrels visit this neighbourhood in much larger numbers during their northern vernal migration than when returning southward in the autumn. At this latter season they probably pass over this district without alighting, as in August and September they may frequently be observed in small parties, numbering eight or ten birds, very rarely exceeding these numbers, and never in large flocks, passing over the village and proceeding in a south or south-westerly direction: they then invariably fly at a great height, and keep constantly repeating their peculiar call-note, without which it would be impossible to identify them.

Dotterell.—In years gone by the month of May, in the North Lincolnshire marshes, was invariably marked by the advent of flocks of dotterell. From some cause or other, however, their numbers have gradually decreased, and previous to this spring four or five years have elapsed without my seeing even a single bird of this once well-known species in our marshes: this year they have returned to their old haunts. On the 2nd of May I observed two, a male and female, on the grass lands; they were exceedingly tame, permitting a very near approach, not even taking flight when I stood to have a look at them. On the 9th, in the same neighbourhood, I saw a flock of ten. On the 11th another flock, numbering fifteen, and on the 16th one containing nine birds. Dotterell are never seen in this district at any period except the month of May, and formerly they arrived with great regularity during the first week in this month, tarrying awhile amidst the solitudes of our marsh-land preparatory to resuming their journey northwards. All the flocks of these birds seen by me this year were exceedingly tame, and, had I been so inclined, could readily have walked up within shot. This indifference to the approach of man may possibly, in a great measure, account for their gradual decreasing numbers. Perhaps some reader of the 'Zoologist' will kindly inform me if dotterell are still met with in any numbers in other parts of England? I find they are seldom mentioned in the 'Zoologist.' When feeding, these birds have a habit of elevating their wings over their back, and they will thus frequently betray their position to the gunner, when otherwise they might probably have escaped detection. Both the gray and golden plover have the same peculiarity. Dotterell, when on the wing, fly very closely together, and keep constantly repeating their wild and musical call-note, which somewhat resembles the cry of the ringed dotterell.

White Wagtail.—May 5th. Observed this afternoon a bird of this species on the “fitties;” it is the only one I have seen this year.

Golden Plover.—Put up a solitary bird in the marsh on the 14th.

Swift.—Noticed the first swifts hawking over the marshes on the 14th, just seven days later than last season. The extraordinary backwardness of the spring and the bitter east winds appear to have driven them away again, as I have seen none in their usual haunts during the last fortnight.

Blackbird.—Found a blackbird’s nest to-day, May 14th, containing three eggs, built in a most unusual situation, namely, amidst the rank aquatic vegetation of a bog in our low grounds: the most conspicuous plants in this spot are some sedges standing three to four feet above the surface: the nest was placed in a slight cavity in the matted root of one of these isolated sedge columns, and only elevated a few inches above the wet and spongy ground, the long drooping wire stems of the sedge completely concealing it from all but the most careful search. I was looking at the time for a waterhen’s nest, and by the merest chance came upon the blackbird’s nest, so carefully was it concealed. The only trees or bushes in the immediate neighbourhood were a few stunted alders.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
May 31, 1866.

Ornithological Notes from the County Dublin.

By HARRY BLAKE-KNOX, Esq.

(Continued from S. S. 227).

JANUARY TO JUNE.

Dates of the Singing of Birds for the Spring of 1866.—Blue Tit made the “sawset” note from the 13th of January. Missel Thrush, from the 8th of January. Sky Lark, from the 19th of January. Song Thrush, more frequently heard. Gold Crest, from the same date; imperfectly. Wren, from the 21st of January. Hedge Accentor, from the 10th of February. Blackbird, same date. Chaffinch, sang from the 21st of February; made its breeding-notes, “wheep wheep,” from the 27th of March. Meadow Pipit, sang in the air from the 9th of March; made its breeding-note from the 27th of that month. Yellow Bunting, March 9th. Common Bunting, April 3rd. Willow Wren,

April 12th. Stonechat, singing in the air March 26th. Corn Crake, from the 14th of April. Wheatear, singing in the air, same date. Cuckoo, from the 20th of April. Whitethroat, from the 17th of May. Linnet, from the middle of April. Redpole, from the end of that month. Snipe, from the same time. Robin, from the beginning of the year. Blackcap Warbler (the only time I ever heard it in Ireland), May 17th. Greenfinch, from the 20th of April. Quail, from the middle of March. Swallow, from the 12th of April. Martin, from the 19th of May. Grasshopper Warbler, May 5th.

Arrival of Summer Migrants.—Lesser Blackbacked Gull, appeared scantily from the 27th of February; abundant from the end of March. Razorbill, arrived in flocks from the middle of March. Guillemot, arrived from early in April. Kittiwake Gull, from the end of March. Shearwater, from the 29th of March. Common Bunting, from the 3rd of April. Chiffchaff, saw (but not heard) this year on the 5th of April. Wheatear, April 6th. Corn Crake, April 11th. Willow Wren, April 12th; immense flocks on the 14th. Gannet and Swallow, April 12th. Cuckoo, April 20th. Martin, at Ball's Bridge on the 27th of April (on the skirts of the city, and about six miles from Dalkey): not seen till the 19th of May at Dalkey. Common Sandpiper, May 2nd. Arctic Tern, April 19th. Grasshopper Warbler, May 5th. Whitethroat, Rosy Tern and Puffin, May 17th. Swift, May 12th; in numbers on the 17th. Common Tern, May 20th.

Glaucous Gull.—On the 29th of January I decoyed a young glaucous gull to my boat. I had a beautiful view of it as it stooped and wheeled about me, picking up the pieces of liver I threw to it.

Sparrow.—On the 10th of February I shot what I thought a black sparrow, and indeed so he turned out, but in a way that I did not expect; he was begrimed with soot. May not this account for many of the "black sparrows" seen? While writing on sparrows, I may mention another kind of variety not unfrequently seen about here since raddle has come into fashion to colour bricks with—*viz.* red sparrows. I must acknowledge that I did start on first seeing a red bird hopping on the road; but, unlike Mr. Pickwick, I did not draw out my tablets till I had sought a closer view, or else I might have informed the readers of the 'Zoologist' of a strange bird, evidently of the finch family. The sparrow builds in such strange places that a dirty coat is of no unusual occurrence, and then, being a pulverizer, and using water so seldom, the consequence would be obvious, if he went to free himself from vermin in dry raddle or soot.

Gray Wagtail.—From the beginning of March the gray wagtail begins to assume the black throat: I never knew this colour assumed otherwise than by a distinct moult. In some individuals the patch is lead-colour, and in all cases in perfect plumage the feathers are fringed with white: this white fringe is fickle, and generally lost in May, the throat then being entirely black. This disappearance of the white fringe has given rise to the statement that the feathers change by transmutation; it is not so: neither does the fringe turn black, but distinctly wears off, and is only the nuptial dress. Yarrell, in his admirable plates, gives too large a patch of black to agree with our Irish bird. Neither does the yellow of the adult male grow more intense in summer than it has been in winter; my experience teaches me quite the reverse, and that the older the male the whiter the breast and sides become, the back assuming a pure unmixed hoary gray, and the wing-quills growing much darker than either the female or the male of last year. The same remarks as to intensity of colouring apply to the wheatear.

Rook.—From about the middle of April the rook of last year begins to loose the feathers from the bill, so that I do not believe in the theory of the rook wearing off the feathers from the bill by boring after grubs, &c. If this be the true solution, why should they fall off at this particular time, and not before? I have long reckoned it a sign of puberty, and I think my belief is strengthened by the fact of the capistri remaining on till now. A wounded rook brought to me on the 9th of April showed a very strange malformation of the feet. Instead of walking on the phalanges, they were perfectly contracted and closed; the bird walked on the front of the ankles actively and well. On being confined to a loft for several hours he cast up pellets like those from a bird of prey: to a casual observer they would seem to be pieces of dry horse-dung: these pellets are very plentiful in rookeries. On making a minute examination of their substance, which are fibres, I came to the conclusion that they were the cuticles of the succulent roots of the couch-grass, called in Ireland “skutch” or “scootch.” On shooting some rooks feeding in a field harassed by this grass I found that I was right, for there was the torn root in the ground, and pieces of it in the bills and throats of the rooks. Now, agriculturists, that a new benefit which the rook does you is laid before your eyes, will you still cry him down and wish that he was exterminated; he that helps you to do what you pay your gold to get done—helps to destroy that curse of many grounds, “skutch” grass? Will you kill him because he takes

a small potato now and then? Do you give him no credit for the grubs he destroys? If he eats some bushels of your corn from the stooks (sheafs), thou selfish, perverse and blind fool, man, did he not follow your plough for months—aye, and will he not do so again—to clear your land from vermin? That very field of waving corn, with its heavy ears nodding to the wind and ripening beneath an autumn sun, which you smile on, did not he help—and bravely, too—to cleanse it for you, and thus to bring it as it is? Did you cause one seed to grow? You did not: no! a greater than you caused the grain to give forth its increase for your benefit: He also gave the bird, and He gives nothing, man, in vain. “Man in his best estate is altogether vanity:” how true, when he tries to fight against Nature, when Nature alone can be mistress, except he (man) can form a substitute to do that good which Nature’s handiwork does for him. What could man substitute for the bird, the rook? We hear of poison manures being used to free the ground from insects. Absurd and fickle! with all these poisons does not the rook kill thousands still, and does he not, from gray dawn till dark, do man a service? Poor ancient headed rook! I have the heart, if not the pen, to plead for you. I examined a young rook from the nest, some days ago, having the upper mandible of the bill completely recurved, the mouth, consequently, being always open.

Siskin.—On the 27th of March I saw two siskins paired. It is very rare to meet them breeding in this county.

Shearwater.—On the 29th of March I met the first arrived shearwater. Through April and May they have been the most abundant bird in the bay, and how they can be called scarce puzzles me. They are all in the same plumage, that given by Yarrell.

Redthroated Diver.—Has been very abundant this spring till the middle of May: I procured many specimens in the several spring plumages, and several with the beautiful red throat. As the plumages of this bird will be the subject of a future letter I refrain from giving them now.

Shag.—I stated in my letter on the shag (S. S. 243) that the feathers of the upper scapulars do not moult: in their first spring they do moult *occasionally*, but *partially*; the greatest amount of these feathers change, as I said, by transmutation, and always so in second winter.

Gannet.—The gannet arrives in the Bay early in April; they are then very abundant, but, strange to say, there are always perfectly adult birds. No such thing as a young bird is to be seen; in fact, adults are always far more plentiful than young on this coast.

Arctic Tern.—Shot a beautiful adult specimen on the 18th of April. This is a very early date for a tern to be seen here. The arctic tern is giving place more and more each year to the common tern.

Purple Colour on the Breasts of Birds.—During the spring months I frequently remark that the breasts of the kittiwake gull and the common guillemot are beautifully suffused with purple. I do not think this natural, but merely a stain from some floating matter, attained in some warmer clime. The razorbill never has it, showing that they could not have frequented the same place; the much later arrival of the guillemot also denotes this. Can any reader of the 'Zoologist' tell me where the guillemot, the puffin and the razorbill go to in winter, as not one in a thousand of the first and last stay here, and none of the puffin in winter.

Ringed Guillemot.—On the 19th of April I shot an adult bird of this species in summer plumage: they are very scarce on this coast. That it is quite distinct from the common guillemot there can be very little doubt, as it is ringed at all seasons and all ages. I would believe it only a variety, when a razorbill without the white line, in summer plumage, is shown to me—a thing much more likely to happen than that the guillemot should assume, and in so many and such permanent cases, too, a white circle to the eye and the lachrymal line.

Blackthroated Diver.—After a long chase for what I thought a redthroated, I was agreeably surprised to find I had killed a blackthroated diver, and a connecting-plumage link, too—far more valuable in my eyes than an adult bird. I could see no resemblance whatever to the northern diver in its plumage, as authors state, and if it had not the black throat I should have certainly called it a redthroated diver. However, on this subject again.

Jack Snipe.—On the 2nd of May a jack snipe was shown me, shot about an hour before. The plumage was the same as in winter. The bird flew strongly, and I cannot but think that if left it would have bred, or perhaps at the time the female was sitting.

Blackheaded Bunting.—I met with this bird breeding at Ballybrack this year.

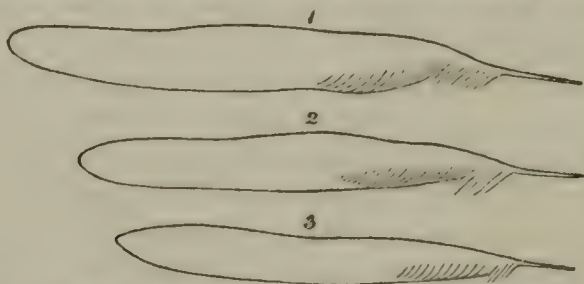
Starling.—Found a new breeding-place of this rare Irish summer bird, at Loughlin's-town, about half-a-mile from that previously mentioned. Twenty or thirty birds breed in some old timbr there.

Blackcap Warbler (*Sylvia atricapilla*).—On the 17th of May I saw a male example of this very rare Irish bird at Ballybrack. Not only did he erect his black crest, but he sang within a few yards of me.

Rosy Tern.—Saw large numbers of this once abundant, but now scarce, County Dublin tern, on the 19th of May.

The Claw on the Wing of the Waterhen.—There is a note in the 'Field' on the claw of the wing of the waterhen. It is not peculiar to the young waterhen, but is found alike on all the family, even the corn crake: the water rails and coots alike possess it. I always considered it the hidden means of the long submersion of these birds, substances being caught under water by it.

Distinctions of the Willow Wrens.—I tried very hard this year to add the wood wren to our Dublin Avifauna, and though I killed some dozens of snowy whitebellied willow wrens, they were all the common *Sylvia trochilus*. That the bird is Irish I am sure, for I have heard it. Should an Irish ornithologist see this, will he try for it, if he should live in a wooded district, such as the Counties Wicklow and Wexford. I am sure it is neglected, for want of a certain distinction: the white belly is not sure, nor is the formation of the wing, as Macgillivray says, a sufficient distinction; of his three plates I can make nothing; the green back is always pretty sure, but the second primary is an unfailing distinction, as the annexed life-sized cut will show.



No. 1. Wood Wren (*Sylvia sibilatrix*). No. 2. Willow Wren (*S. trochilus*).
No. 3. Chiffchaff (*S. rufa*).

HARRY BLAKE-KNOX.

Dalkey, County Dublin.

The Migratory and Wandering Birds of the County Dublin, with the Times of their Arrivals and Departures. By HARRY BLAKE-KNOX, Esq.

(Continued from S. S. 227).

THE WATER BIRDS.

Great Plover.—Has occurred.

Golden Plover.—Resident. Enormous flocks visit us from October.

They generally leave from the beginning of April. Have eggs early in May.

Ringed Plover.—Resident in small numbers. Appears in vast quantities from the beginning of September, and begins to leave from the end of February. Has eggs in May.

Kentish Plover.—This strangely named bird has occurred in a few instances during the migrations. It is very scarce.

Gray Plover.—Is a regular autumnal migrant, and more common in winter than believed. It has occurred occasionally late in spring in the nuptial garb.

Lapwing.—Resident. Great additions swell our native flocks during autumn, winter and spring. Arrives and departs irregularly. Eggs early in April.

Turnstone.—Common from end of August till October. Many to be met with in winter. Occurs again often in numbers during the spring migration.

Sanderling.—Very common during autumn and early winter. Arrives as early as August. Not so abundant in winter.

Oystercatcher.—Resident. Great additions in autumn and winter.

Heron.—Resident. Migrates to and fro during winter. It is then as common on the sea-shore as in the rivers.

Bittern.—Like many others, nearly exterminated, and where once plentiful is now rare.

Little Bittern.—Has occurred. Is very rare.

White Spoonbill.—Rare. Has occurred to myself.

Glossy Ibis.—Rare. Has occurred to myself.

Curlew.—Resident. Vast additions from autumn till spring.

Whimbrel.—Common in autumn and spring. Occurs also throughout the winter.

Redshank.—I do not know of the redshank breeding here. It is a common bird in autumn and winter in flocks. Arrives early in August, though I have seen it sometimes earlier: I cannot correctly state when it leaves.

Green Sandpiper.—Occurs occasionally in autumn and winter, and is perhaps not so rare as believed.

Sandpiper.—A regular summer visitor, from the beginning of May. Frequents the sea-rocks of Dalkey from the end of June till middle of September (latest).

Greenshank.—Very common in autumn, and always to be met with in winter: sometimes abundantly.

Avocet.—Has occurred ; but is perhaps now a bird of the past.

Still.—Same remarks.

Blacktailed Godwit.—Autumnal migrant, and to be met with in winter. Not common.

Common Godwit.—Arrives in numbers from beginning of August ; very abundant in September and October, and to be met with all winter.

Ruff.—Rare ; has occurred during autumn and spring—in the latter season to myself.

Woodcock.—Resident ; great additions in winter from the end of September. Arrives all through the winter. Migrates locally. Leaves from the end of March till middle of April.

Great Snipe.—Rare.

Common Snipe.—Resident ; great additions in winter. Arrival too uncertain to state positively, but generally from September ; departure equally uncertain. Residents are paired late in March and early April ; this I have often noticed by the birds “towering” in the air like sky larks, and remaining in the same spot.

Winter Snipe.—Arrives in October, leaves in February. This bird, though considered as the common snipe, is widely different from it. It is totally different in markings and size ; it also never breeds, to my knowledge, in Ireland, whereas the other does abundantly. Sex or season does not account for this difference. The common snipe is alike in winter and summer, and the male is similar to the female. I have also seen male and female of the brown or winter snipe, and they are similar to each other. The bird I allude to is not the brown snipe of authors (*Macrorhampus griseus*) : it is known, I suppose, to every snipe-shooter as the “big snipe,” the “brown snipe,” the “Norway snipe,” &c.

Jack Snipe.—Never heard of its breeding in Ireland. Common from October till end of March ; generally solitary. May be met with in the ditches, along the east coast, before departure, in pairs. Leaves during March and early part of April. This year I saw one an hour after being shot, in the shooter's hand, on the 2nd of May.

Sabine's Snipe.—Have heard of its occurring. In other parts of Ireland it has been frequently taken, and I believe is many times eaten by non-naturalists.

Curlew Sandpiper.—Autumnal migrant ; not at all plentiful, though perhaps more abundant than known.

Dunlin.—Do not know of its breeding in this county, though, from

its early appearance with its fully fledged young in June (18th the earliest), I am inclined to think it does. It is very abundant from July. Have seen it as late, and in flocks, as the end of April, and many birds at this season with only one or two summer feathers on the body. In late spring, and on its first arrival in autumn, it seems to prefer rocks to the strand: at high water it frequently leaves the sand for the rocks in winter.

Little Stint.—Autumnal migrant; not often procured. May be met with also in early winter. Is undoubtedly more common than believed.

Buffbreasted Sandpiper.—Has occurred. Very rare.

Purple Sandpiper.—Common in suitable localities from beginning of October to February.

Knot.—Common from beginning of August till middle of April.

Corn Crake.—Resident. Arrives abundantly from the second week in April. Crakes, about the 20th of that month. I can give no certain time of departure; they are met with as late as October, and as I said are resident in small numbers. I see no reason for laughing at the supposition that these birds hibernate. That they migrate I am sure, for I have found them dead in the sea in spring.

Spotted Crake.—Has occurred pretty often in autumn and winter, and is, I doubt not, more common than believed.

Waterhen, Water Rail and Coot.—Resident; migrate partially.

Gray Phalarope.—Has occurred in autumn and winter; is rare.

Great Wild or Hooper Swan.—Is met with in winter; greater numbers pass over the county.

Small Wild or Bewick's Swan.—Commoner than the last. Same remarks.

Black Swan.—Has occurred in a wild state in two instances; one at Lambay, 1862.

Canada Goose.—Occurs frequently in winter and spring. These birds are so wary and hard to shoot that I do not believe that they have escaped from confinement. I have seen large flocks, easily distinguished from any other by the white cravat, by which name the bird is known to many shooters. On the Wexford coast it occurs often, and is called the "choker" goose.

Grayling or Graylag Goose.—Is rarely shot in winter, but perhaps not so rare as believed.

Bean Goose.—A regular winter visitor, and may be seen migrating south and west from the beginning of September. They generally fly

high. Not one for every thousand that pass over the county alight in it.

Whitefronted Goose.—A regular winter visitor: occurs from October. Is more abundant in this county than the last. Leaves towards the middle of March.

Bernicle Goose.—A regular winter visitor from October to end of March.

Brent Goose.—A regular winter visitor from first week of September till end of April.

Egyptian Goose.—Has occurred twice to myself; a solitary individual shot December, 1862, and in January, 1863, a flock of some dozens passed along the coast to the north strand. It is generally thought that these birds have escaped from confinement. Why is their arrival more strange than that of the corn crake, &c., not to mention the belted kingfisher, the purple martin, or the yellowbilled cuckoo?

Shell or Tortoiseshell Drake.—A winter visitor; irregular in its time of arrival and departure. Breeds in Ireland.

Wild Duck.—Resident; great additions in winter.

Shoveller.—To be met with in winter.

Gadwall.—Winter visitor, and more common than believed.

Pintail.—Winter visitor.

Garganey.—Very rare. Spring.

Teal.—I have heard of its breeding, but I doubt it. Common in winter. Irregular in its migration.

Widgeon.—Very abundant in winter. Irregular.

Eider Duck.—Very rare; in winter.

King Duck.—Once shot in Ireland, and that in Kingstown Harbour.

Velvet Scoter.—May be regularly seen in the Bay every winter.

Black Scoter, Pochard and Tufted Duck.—Regular winter visitors.

Scaup Duck.—Regular winter visitor, from middle of September till end of April.

Goldeneye.—Regular winter visitor, from beginning of October till end of April.

Smew.—Occasionally to be met with on the sea in winter; is more a lake bird.

Redbreasted Merganser.—Is a regular winter visitor and breeds in Ireland.

Goosander.—Not so abundant as the last.

Great Crested Grebe.—Growing rare; breeds in Ireland still.

Rednecked Grebe.—Has been met with in winter.

Sclavonian Grebe.—Is to be met with in winter.

Eared Grebe.—Rare; has occurred in this county in June, in full nuptial dress, so was most likely breeding.

Little Grebe.—Resident; to be met with on the sea in spring.

Great Northern Diver.—Winter visitor, from beginning of October till April.

Blackthroated Diver.—Is occasionally to be met with in winter. Birds called blackthroated divers are small individuals of the great northern. The true blackthroated diver is scarcely larger than and very like the redthroated. I have shot five or six myself; the last, last April.

Redthroated Diver.—Winter visitor from beginning of October till middle of May.

Guillemot.—Is a regular summer visitant. Immense flocks arrive in the Bay from the beginning of April. Some thousands breed with us. It is again very abundant in autumn during the southerly migration. It is to be met with in small numbers from December till the spring flocks arrive again.

Ringed Guillemot.—Is to be met with in very limited numbers.

Black Guillemot.—It breeds in some localities, and is to be met with in autumn, winter and spring. I consider it a scarce bird.

Little Auk.—Occasional.

Puffin.—Regular summer visitor, and breeds on the Islands. Arrives from end of April or early in May, and leaves in September. I have shot the young as late as November.

Razorbill.—Same remarks as to guillemot, but that it arrives from the middle of March, and does not mix with the guillemot.

Cormorant.—Resident; great additions to the flocks in winter.

Shag.—Same remarks.

Gannet.—To be met with in autumn and spring in large numbers. Occasional in winter.

Swift or Ruppell's Tern.—Has been once obtained in Britain, and that, in this county, near Sutton. Two others were in company with the one shot.

Sandwich Tern.—This strangely named bird is to be met with not unfrequently in summer and autumn. It still breeds in one spot on this coast, known I think to few, if any, but myself.

Roseate Tern.—Is a regular summer visitor, and breeds still in some localities known to me. It used to be commoner than either of the

two next named, till some shooters and egg-baggers, or oologists (so they style themselves) came to their breeding haunt, the Island of Rockabill, slaughtered hampers-full of the then breeding birds, and carried away indiscriminately all the eggs they could find. The consequence is this ornament to the coast is lost, and Rockabill is now a desert rock. I consequently treasure my few pairs of rosy terns, and nothing would tempt me to shoot or take an egg of either the Sandwich or rosy tern in summer. It is often very common in autumn; this was the case last September.

Common Tern.—A regular summer visitor from middle of May. It leaves in October. Is very common.

Arctic Tern.—Is a regular summer visitor from end of April till October. Not so common as the last.

Whiskered Tern.—Has in one instance been procured in Dublin, in 1846, by Mr. M'Coy: it was placed in the collection of Mr. T. W. Warren, of Dublin.

Little Tern.—Visits us in spring and autumn; it is never very abundant. Breeds in very small numbers.

Black Tern.—Is of occasional occurrence.

Whitewinged Black Tern.—Has occurred twice in Ireland, and both times at the mouth of the Liffey. First shot in October, 1841, by Mr. M'Coy; second, by a Mr. Massey.

Noddy Tern.—Has occurred to myself; is very rare.

Sabine's Gull.—Very rare; has only been met with three times, in Dublin waters; the last shot by myself, as recorded in the pages of the 'Zoologist.'

Little Gull.—Very rare; I have seen it.

Bonaparte's Gull.—Very rare; I shot one in the Bay, in July, 1864: another is recorded in the 'Zoologist' (Zool. 4762) as occurring off Skerries, which is in this county.

Brownheaded Gull.—Resident in some numbers: very plentiful from July till March.

Masked Gull.—Birds measuring the same as the masked gull occur, with the brown head. In spring and autumn I have often seen gulls with the mask.

Kittiwake.—A regular summer visitant from middle of March; many remain all winter.

Ivory Gull.—I cannot positively say I know this gull in this county, though I have seen a gull once or twice so gannet-like in appearance that I could not but think them ivory gulls.

Common Gull.—To be met with all the year round; in great numbers in winter. Adults in summer dress are rare in spring and summer, and even the young are scarce in the early part of summer.

Herring Gull.—Resident; very common during winter from September till April. They are not so plentiful in summer.

Lesser Blackbacked Gull.—The summer gull of this county. Arrives stragglingly in March; is very abundant from April, grows scarce from October, and is rare in winter. Breeds.

Great Blackbacked Gull.—Resident; more abundant in spring; in stormy weather, in winter, many are driven into the Bay.

Iceland Gull.—Stragglers to be seen every winter, chiefly in the cream-colour dress.

Glaucous Gull.—Same remarks, but rarer than the last.

Skua.—Not uncommon in autumn. None of the skuas are to be seen in spring,

Pomerine Skua.—Some autumns the commonest of its family: to be met with every autumn.

Richardson's Skua and Longtailed or Buffon's Skua.—Common in autumn.

Fulmar Petrel.—I only know of it occurring once, and that an adult, on the north strand.

Great Shearwater.—Occasional in spring and autumn.

Shearwater.—One of the commonest birds of the Dublin waters in April and May, to be met again in autumn in numbers. Stragglers during winter. Breeds.

Forktailed Petrel.—Has occurred.

Storm Petrel.—Is to be met with occasionally.

This list of sea-birds, I think, will make up for the great deficiency in our land Avifauna, and is one that no county need be ashamed of. It comprises one hundred and twenty-one species. Thus, leaving out the mealy redpole, the Avifauna of the County Dublin consists of two hundred and eighteen species.

HARRY BLAKE-KNOX.

Dalkey, May 22, 1866.

Errata.—In my former paper there are the following misprints:—Page 224, under blackheaded bunting, read "In Mayo;" not "in May." Page 226, under starling, read "Ballybrack," not "Ballybrook." I have also made a serious error myself: under swallow, read "Summer visitor from the second week in April," instead of "from the end of April."—H. Blake-Knox.

Honey Buzzard in North Devon.—Mr. Vingoe received from North Devon yesterday a fine specimen of the female honey buzzard. There was a chain of eggs in the ovary, but whether they would have been laid this year is doubtful. The upper plumage from the head to the upper tail-coverts is of an uniform hair-brown colour, excepting only on the nape of the head and neck, where this colour is somewhat broken with white; the chin, breast and belly are dull white, with thickly spread longitudinal patches of hair-brown. The tail has the first transverse bar at the centre, with two others less distinct upwards; the other parts of the tail marbled with two shades of brown transversely; the under part of the tail very light in colour: there is no shade of blue about the head.—*Edward Hearle Rodd; Penzance, June 2, 1866.*

Great Gray Shrike in Wiltshire.—Since I announced in the 'Zoologist' for May (S. S. 228) the occurrence of *Lanius excubitor* in Wiltshire, I have received information of two further captures of the same bird; one on the borders of the county, or, to speak more accurately, just within a neighbouring county, and the other on the 2nd of this month, in the parish of Road, which has derived so unenviable a notoriety from the foul murder committed there some years since. Whether the great gray shrike is unusually numerous in England this year, or whether it is exceptionally common in Wiltshire just now, I have no means of knowing; but it is certainly not a bird to escape notice when seen by the least observant; and I have never before had my attention called to so many captures of it within a short space of time in this county.—*Alfred Charles Smith; Yatesbury Rectory, Calne, May 26, 1866.*

Curious Position of a Blackbird's Nest.—A blackbird has this season built its nest in a somewhat curious place. A rustic arbour lately made in our garden, and composed of twisted pieces of "barked" oak, is placed against the south wall. The bird has built its nest between the brick wall and the pole which supports the roof, and being on a level with the seat, indeed partly resting on it, it is quite open to the gaze of anyone who may enter. Whilst it was still sitting on its unhatched eggs the oak was being painted, but though the brush must have often almost touched the nest, the poor bird never left it during the operation, and she is now rearing three young birds in security. She has become a favourite even with the gardener, who is one of a race of men not generally prepossessed in favour of the thrush family.—*J. A. Harvie Brown; Dunipace House, Falkirk, May 25, 1866.*

Golden Oriole in Suffolk.—On the 28th of April last a splendid mature female of the golden oriole passed into my hands for preservation. It had been shot a day or two previously in the vicinity of Chediston, near Halesworth, in Suffolk. Its stomach was filled with the remains of insects and some berries—apparently those of the yew.—*T. E. Gunn; 3, West Pottergate, Norwich.*

Arrival of Migrants.—Tuesday, April 17, 1866. I saw two wheatears on Blackheath; one among the furzes at the N.E. corner of the Heath; and the other, a fine male in splendid plumage, to the S.W. of the tumulus. 18th. At 6 P.M. I saw an old swallow fly due north across the Heath and over Greenwich Park; his flight was steady and strong, and as straight as an arrow. 19th. Saw one redstart on the iron rails round the Deodara, in Greenwich Park. 23rd. Strolled round the S.W. face of Shooter's Hill: many willow wrens were busily flying to and fro the wood and fields: saw one whinchat and one redstart alternately take possession of the elevated stump of an old whin; down went the whinchat to seize its prey, up went the redstart; the moment he darted down, up went the whinchat: concealed behind the hedge I watched

them through a glass for some time. I saw one nightingale feeding amicably with a robin along the hedge-bottom. I saw but one swallow hawking about the Hill. 24th. Saw two house martins with about half-a-dozen swallows hawking over the upper long pond in Blackheath Park. 26th. In the evening saw one swallow take a turn or two under the lee of the gravel-pit by Greenwich Park wall, and then off north. 27th. In a walk by Kidbrooke through the fields towards Eltham and round by Shooter's Hill Wood, I saw eight whitethroats, one tree pipit, two whinchats, three swallows (two located at Well Hall and one on its passage), and but two willow wrens (the numbers I saw on the 23rd were dispersed). May 4th. The redstart in Greenwich Park had picked up a wife, and comfortable enough they looked: I noticed a few house martins about the houses. 5th. Walked through the fields to Eltham: saw a few whitethroats, one building: loitered about Eltham; saw neither swallow, martin nor swift: a cold, showery, windy day. 6th. On Sunday evening I saw two flycatchers on the rails by the upper long pond in Blackheath Park, evidently just arrived. 7th. To Eltham, where I saw no swallow, no martin and no swift; walked by the old Palace to the new railway bridge near Mottingham: saw two flycatchers on the rails and paling under the fine old trees in Eltham Park: saw one house martin making a rapid north-east passage along the new railway: the whitethroats settled down, building and making love: a warm day. 10th. At the north-east gravel-pits on the Heath I counted fourteen house martins careering in the last rays of the setting sun. I was now taken ill, laid up, and could not continue my daily observations. Having requested a person living by Eltham Church to keep a look out for the swifts, who build in the roof of his house, he told me they came on the 10th of May. On the 9th of June I counted seven swifts hawking about Eltham Church. It is pleasant to sit in Eltham churchyard, admire its beautiful plants, and watch the unrivalled flight of the swifts as they dash round the church and soar above its steeple. I seldom pass through without reading this favourite epitaph:—

“ Here lie the remains of
WILLIAM AND MARY.
Their souls are out of prison let,
It was Christ alone that paid the debt,
Their sins were not a few:
Reader believe in Christ,
And He will pay for you.”

Of these mysterious persons I can learn nothing. If the divinity inside the church be as sound, no wonder the swifts delight to build in so sacred an edifice.—*Matthew Hutchinson; Blackheath, S.E., June 11, 1866.*

Arrival of Hirundines at Looe, Cornwall.—On the 2nd of April I saw seven or eight swallows and a sand martin hawking over a large fish-pond, where I have first seen them for many years past. I did not see any again until the 12th, which was two days later than I first saw any last year. Martins did not make their appearance until the 30th, on which day I also saw, for the first time, seven swifts; the wind was easterly and very cold at the time, but during the past week we have had warm weather, wind from the south-west. On the 2nd of May I think I may say I saw the arrival of a large body of swallows and martins: on passing the pond before mentioned, about 10 A.M., I could not see a single specimen of either, but on my return that way in

less than half-an-hour there were hundreds, both of swallows and martins, apparently weak on the wing: some were pitched on the reeds and shrubs surrounding the pond, whilst others came so close to me, where I was sitting on horseback watching them, that friend who was with me became quite excited in endeavouring to knock them down, as he said, "for the sake of being able to say so," that is, with his closed umbrella; but he did not succeed in his endeavours.—*Stephen Clogg; Looe, May 10, 1866.*

Starling hawking for Flies.—On one of the few warm and still days we had in the course of last month, I observed two or three starlings together hawking for flies, at a considerable height from the ground. There could, I think, be no doubt as to their occupation: they were rising and falling in the air with almost motionless wings, their actions very much resembling those of the house martin when similarly engaged. This is not the first time I have seen starlings so employed, though I do not remember to have ever seen it noticed anywhere.—*Gerard Barton; Sunderhall Grange, Wymondham.*

Redwinged Starling (*Sturnus predatorius*) *in Scotland.*—A fine male specimen of the above rare visitant to this country was shot, on the 12th of June, by Mr. A. Rannie, of Greenlaw, in his garden at Mill of Boyndie, about two miles from the town of Banff. It was picking at the apple-blossom, when it drew Mr. Rannie's attention by its call of "chuck chuck." Although the patch on the wing, a bright orange-red one, is somewhat interrupted by a few very small darker feathers, and the bird otherwise being mixed here and there with some narrow gray streaks, still it is a very pretty one.—*Thomas Edward; Banff, June 15, 1866.*

Cuckoo sucking Eggs.—A partridge's nest containing fourteen eggs was found in a wood contiguous to the vicarage land, on the 12th of May, by some persons employed in felling timber. On the morning of the 14th the nest was again visited: there were then only seven eggs. On watching the nest, which was under a stub on a bank, a cuckoo was seen to go into it twice, and on a search being made the shells were found, where I myself saw them, three or four yards below the nest, under the branches of a felled tree, the eggs having evidently rolled down, when brought out of the nest by the cuckoo, to that spot where she had broken them and eaten their contents. I never before heard of cuckoos eating partridge's eggs; if they are in the habit of doing so they are as destructive to game as hawks.—*H. T. M. Kirby; Mayfield Vicarage, Sussex, May 19, 1866.*

Association for Reducing the Number of Wood Pigeons.—I am directed by this Association to annex a Report of its proceedings during the past year. The Members of the Association at the same time directed me to solicit your aid and co-operation in promoting the object in view, and they humbly hope you will be pleased to give direction for at least such a partial reduction in number of the wood pigeons upon your estates as may be readily attained.—*Thomas Hunter, Secretary; Kelso, 25th March.*

[This address has been widely circulated. As many of my readers are not pledged to the destruction of the beautiful bird to which it refers, may I ask them to supply me with a report of their observations on the food of the wood pigeon. My own experience gives this bill of fare:—turnip-tops, holly-berries, rowans, hips, haws, charlock (seeds, leaves and flowers). Now that the destruction of the species is meditated, it seems worth our while to inquire what is the injury done by the accused.—*Edward Newman.*]

Little Bittern at Scilly.—I was presented yesterday, by Mr. Smith, of Trescoe Abbey, with a very beautiful adult male specimen of this little heron, in the highest possible perfection of plumage, and with the neck-ruff much fuller and bittern-like than any specimen I had seen before or in any representation of the bird in books. Its length is exactly $15\frac{1}{4}$ inches. I am very glad that I ascertained its weight, no reference having been made to its weight by any ornithological author in my library. Its weight was exactly three ounces, and there was no waste from loss of blood or mutilation. The bird was, contrary to any of the Ardeidæ that I have handled, full of flesh, with some fat on the breast; so that, when in low condition (probably its average state) it would not exceed $2\frac{1}{4}$ or $2\frac{1}{2}$ ounces. It was observed on the banks of the large pool near the Abbey on Trescoe Island, where there is an abundance of sedge and covert adapted to the economy of the heron tribe. The sex was quite apparent on dissection; the diminutive size of the body was quite remarkable, not exceeding that of a missel thrush.—*Edward Hearle Rodd; Penzance, June 14, 1866.*

Temminck's Stint at Rainham.—On the 22nd of May last my brother, G. E. Power, found a Temminck's stint frequenting the marshes in the neighbourhood: after some trouble he succeeded in shooting it, an adult female in plumage intermediate between that of summer and winter. Again on the 25th of the same month he succeeded in obtaining another, also a female: this latter had nearly attained its summer plumage. We have now obtained five of these comparatively rare stints during the last ten months; all within a radius of about a quarter of a mile. They are, however, the only birds of the genus that have been heard of in the neighbourhood.—*W. H. Power; City of London Hospital for Diseases of the Chest, Victoria Park, N.E., June 5, 1866.*

Late Stay of the Snipe.—On the 22nd of May my brother flushed and killed a full snipe, on the marshes near Rainham. It proved a female in good condition and forward in egg, some being about the size of peas. I am sure that snipe breed in Sussex and Hampshire, but have never heard of their remaining to breed in this locality. It is possible, however, and not improbable, that some breed near at hand, since I have found them during every month in the year except June; the latest stay in the spring being the date above mentioned, and the earliest return in the autumn, the 20th of July.—*Id.*

Nest within Nest.—An over-year's nest of the blackbird was obtained in this neighbourhood during the present season, in the interior of which a pair of industrious titmice had constructed a nest for themselves and laid several eggs.—*T. E. Gunn; Norwich.*

Muller's Topknot and Streaked Gurnard at Penzance.—I have had brought to me to-day Muller's topknot, and I have taken this morning two specimens of the streaked (also called the "French" and "rock") gurnard, all from Mount's Bay. These fish are so far from exceptional here (I have myself taken forty-eight specimens of the former and twenty-nine of the latter since 1858) that I should not have noted them to you, but that both are classed among the rarer British fishes.—*Thomas Cornish; Penzance, May 31, 1866.*

Sturgeons off the Coast of Norfolk and Suffolk.—Two splendid examples of the sturgeon have been captured off the coast of these two counties, one on the 10th and

the second on the 19th of May. The former was taken in Holkham Bay by the "Premier" steam-trawler, and was immediately sent as a present to his Royal Highness the Prince of Wales, by Mr. J. A. Beeching, of Wells. His Royal Highness graciously accepted and acknowledged it. This specimen measured 8 feet 6 inches in length, and weighed 210 lbs. The second example was caught off Lowestoft, in Suffolk, and exhibited at Messrs. Weaver's stall in our fish-market: it measured 8 feet long, and weighed 168 lbs.—*T. E. Gunn.*

Block's Gurnard (*Trigla Blochii*) in the *Moray Firth, at Banff*.—An example of this gurnard (or, as we call them, "crunacks") was captured here in a rock-pool, a few days ago. It had by some means or other come pretty close in shore during high-water mark, and, it would appear, had got entangled amongst the rocks, so that it had been unable to make its way out again with the receding tide. The pool, though not deep, was pretty large, so that it took a considerable time, and not a little trouble, before the capture was made. So much so, in fact, was this the case that if it had not been a rarity, I should most certainly have given in and acknowledged myself beaten long before my object was accomplished, for between water and perspiration I was in a pitiable plight by the time I gained the victory. As it was, however, I was well repaid in the end, besides the fun—that is, if there is any other person than myself so foolish as to call splashing up to the shoulders and eyes amongst brine, sea-weed and slippery rocks, "fun." Although the fish is not large it is a splendidly marked specimen. In the water, and whilst shooting across and athwart the pool, its bright colours had a most beautiful appearance. The spot on the first dorsal is rather of a dark purplish colour than black, and very conspicuous when the animal is swimming. I am not aware of the species ever having been detected on this part of the coast before. It is not mentioned in the "List of the Fishes of the Moray Firth," by the Rev. Dr. Gordon, of Birnie, in the 'Zoologist' for May and June, 1852.—*Thomas Edward; Banff, June 15, 1866.*

The Calamary on the Coast of Norfolk.—An example of this species of cuttle-fish (*Loligo vulgaris*) was captured on the coast of Cromer during the early part of March last. It measured between three and four feet in length.—*T. E. Gunn.*

The "Bacca-Box" (Panopæa norvegica) at Macduff, near Banff.—Some time ago a mutilated specimen of that rare shell in this country known as the "bacca-box" or "gaper," was brought me from Macduff, amongst some other old shells. It had been brought in from deep water by some of the fishermen, and had been carelessly trodden on. A little patience and labour, however, has done much to make it a passable specimen, when and where no better can be got: it is also a dead and worn one, still it shows the species is in the Moray Firth.—*Thomas Edward; Banff, June 15, 1866.*

Notes on Alpine Entomology.

By T. V. WOLLASTON, Esq., M.A., F.L.S.

THE interesting paper of Mr. Albert Müller, in last month's 'Zoologist' (S. S. 273), seems to call for a few passing remarks; and as he has appealed to an observation or two of mine in the 'Variation of Species,' it will not be out of place if I supplement the facts which he has adduced by thanking him for the able and suggestive manner in which they have been brought to bear on certain specified peculiarities of Alpine Entomology.

The particular phenomenon to which Mr. Müller draws more immediate attention, and which was so carefully noticed by Mr. Pascoe, I have not myself observed; for my own researches, at very lofty altitudes, have been made chiefly in southern countries, where even the lower limits of the snow are at so high an elevation that they are comparatively difficult to reach; yet at the head of the St. Gothard Pass in the Alps, I well remember, during the month of May, to have been forcibly struck by the great accumulation of insect-life at the bottom of some rounded depressions in the snow, which latter, from a cause which I could not ascertain, had melted so as to expose the soil beneath it—thus forming, as it were, black oases amidst an ocean of unsullied white. They were mainly Coleoptera; and as I was sufficiently contented at the time merely to *collect* them, I omitted to take any particular note of the circumstances under which they were found. But if insects (at any rate dark-coloured ones) may retain warmth enough, even singly, to occasion small hollows in the snow, when, inebriated with excess of oxygen, they "gradually sink down" into their last resting-place, might not a hole thus unwittingly excavated serve as an occasional pit-fall for other specimens, the accumulated heat from which (even though exceedingly slight) would probably suffice to shape-out the little basins to which I have just alluded?

But there is evidently a distinction to be drawn here, which, although acknowledged, is scarcely perhaps sufficiently insisted upon by Mr. Müller; for the creatures which occupy the nival regions arrange themselves conspicuously under two heads—(1), those which are *confined* to the uplands (never descending into the tracts beneath; and (2), those which either wander thither of their own accord, or else are carried *nolens volens* by the currents of air from the plains. Now if it be really true that a small hollow in the snow can be caused by the

settlement of an insect which becomes, as it were, so intoxicated with delight that it is kept stationary while providential Nature puts her melting process into operation, it seems to me, when looking at the *general* question of these depressions, that we must exempt species which are absolutely *peculiar* to the heights, from even a share in (at all events) the *commencement* of the phenomena; for it is hardly likely that *they* would become seriously affected by conditions of temperature which must take place annually within their appointed range, and which their life-histories would doubtless show us to be the rule rather than the exception. But the case is far otherwise with the denizens of a warmer zone; for if *they* perchance should find themselves, by the force of circumstances, in an atmosphere more frozen and rarified than that for which they were destined, the *results* which Mr. Müller has so graphically described, and which are apt to be experienced by ourselves when overtaken in the regions of perpetual snow, might be considered not only as possible, but as even *à priori* probable. And I should therefore argue, that the species thus acted upon, and ultimately destroyed, would not be the *strictly* "alpine" ones, but more often those which had been brought up from the lower districts.

The above conclusion would at least, I think, hold good in accounting for, at any rate the *beginnings* of cavities such as those which I myself met with; as well as for the entire elaboration of the small and cylindrical ones, observed by Mr. Pascoe, in which a *single* insect only appears to have been concerned. But it is not difficult to conceive that, where a nucleus has been established by a solitary individual (one probably from a more genial temperature), the hole thus commenced might sometimes prove a trap for even *peculiarly alpine* forms—which, in their turn, would contribute their quantum of united warmth, which they had previously absorbed from the direct rays of an unclouded sun, to increase the dimensions of the hollow. It would be by some such explanation as this that I should account for the fact that the Coleoptera which I took at the head of the St. Gothard Pass, within the little basins which had been shaped out in the snow, were for the most part such as are *exclusively alpine* in their habits. And, hence (I may add) follows the desirability of ascertaining for certain, in all instances, what the species actually are, for it is by that means alone that we can arrive at a true solution of the present problem; and that, consequently, any traveller who may have the opportunity of chronicling the phenomena which Mr. Müller has specified

will perform a good work by doing so, and making the results known.

But, apart from the particular question of these small nival cavities, let me add a word or two on the interest which attaches itself to "alpine collecting" generally. That nearly all the phenomena, and the majority of species, which greet us in those lofty abodes are *new* to the naturalist who has never before ascended to within even a short distance of the eternal snow, is scarcely more than a truism; and some of the contingencies to which insects would seem to be liable in that land of wonders have been well stated by Mr. Müller. But, at the same time, let us not forget that the "Hand which has wisely provided that eggs, larvæ or pupæ will stand the severity of not only one but often several winters, in those tracts, before progressing to the next stage" is assuredly present no less to protect the denizens of the plains—where it often happens that the external conditions, whether of heat, cold or drought, are (apparently) as adverse to their continuance as could possibly be the case even on the upland heights. Thus, for instance, during the past winter, while cruising with Mr. Gray and the Rev. R. T. Lowe amongst the islands of the Cape Verde Archipelago, we were assured both in Fogo and Brava that it was *three years* since they had had rain! and the intense dryness of the entire group fully attested the truth of this statement. Our mission was principally for Coleoptera; and it became difficult to resist the inquiry as to how insect-life could possibly be sustained in a country which was thus reduced to the merest dust and scoræ, occasionally so for several years together, consequent on the suppression of the autumnal showers. With the exception of a favoured spot here and there, usually at a high altitude and in the heart of the mountains, where a trickling stream (narrowed into a thread) seemed to carry along its course the remains of a scanty vegetation, or where an infinitesimal, slimy pool in some exhausted river-bed, told of water in more prosperous times, there was, in some of the islands, scarcely a green herb to be detected, at first sight, from the sea-level to the summits of the peaks. And this state of things, we were told, was apt to be prolonged to such an extent as to end in a total famine both to man and beast. Yet so surely as the "gates of heaven" are opened above the parched-up soil, it matters not for how long they were previously shut—all life bursts forth afresh, as if by magic, the hills become green, and insects (of which we saw the remains in abundance) teem amongst the herbage and under stones. Although dry to an excess everywhere, undoubtedly

the *very* driest portions of those depauperated isles are the lower districts towards the coast; and they supply a marvellous illustration of how animal and vegetable life may be alike suspended in accordance with external contingencies, for almost an indefinite time, without running even a risk of ultimate destruction.

But the real delight of "alpine collecting" is not to be measured by any such considerations as those to which I have appealed. There are wonders enough at every step to assure the lowland naturalist that he is in a strange place, where every object of sight and sense must be noted—not merely with truthfulness and care, but with something bordering upon reverence. To be in close proximity with regions almost unknown is in itself a privilege not to be trifled with; but to have toiled there, through a weary way, with the sole purpose of scrutinizing Nature in her wildest moods, and of turning one's information to account, leaves on the mind a feeling of responsibility which none can understand but those by whom it has been experienced. This feeling perhaps is more or less impressed upon us in *every* unexplored country, while conducting our researches, but it is seldom so conspicuous as when great altitude invests the latter with an additional charm; for then it is that we seem to have reached at last the very climax from whence we may look down upon a new creation, and ensure anomalies at every turn. It was with some such previsions as these that I first pitched my tent on the extreme summit of Madeira (the glorious Ruivo, more than 6000 feet above the sea), and afterwards (at an altitude of at least 9000 feet) trod for the first time the snow-fields of Teneriffe. It may be perhaps that an undue prejudice in favour of the Canaries, after having ransacked assiduously the neighbouring archipelago, had inclined me to look for a richer harvest in Teneriffe than elsewhere; and certainly the great elevation of that island, the volcanic cone of which is more than 12,000 feet above the sea-level, would seem (thus far at least) to give it the place of honour throughout all the Atlantic, signaling it emphatically as one of "creation's landmarks." But, whether this be the case or no, I cannot plead guilty to a shadow of disappointment (but altogether the reverse) when I was fortunate enough, day after day, to find myself far above the cloud-line, under a canopy of transcendant blue, in all the stillness and glitter of an alpine paradise. It was in May of 1859 that I became acquainted with those upland wilds; and the snow was then rapidly disappearing, except on the monstrous cone, which rose up straight in front of me—robed in a garment of unspotted white.

The cindery ridges and plains around its base were consequently in full glory, for the fierceness of an African sun had not yet parched the soil, which, wet from the general thaw, was already clothed, here and there, with a scanty vegetation, and had become suddenly rich with a Coleopterous Fauna of its own. The brilliancy of the atmosphere in that elevated region is indescribable; and the passing vapours which would ever and anon catch the apex of the Peak, and condense themselves into the most graceful and fantastic shapes,—sometimes radiating symmetrically round the uppermost point, like a fan of the thinnest gauze, and then disappear in an instant as if by magic,—were a constant source of admiration, so that the eye seemed never weary of feasting on their light and wondrous forms. But what charmed me most were the wiry bushes of the “Retama” (that noble Broom of the Teneriffian heights), the dense thickets of which, and grand isolated specimens, although interspersed with portions of yet unmelted snow, were just bursting into flower—solid masses of bloom, varying in colour from the purest white into a clear rosy pink. The excessive fragrance of these blossoms, rendered trebly delicious in an atmosphere thus rarified, is proverbial; and the inhabitants of the lower districts are wise enough to take advantage of the supply of honey to be obtained from them by occasionally sending up their bees *en masse*, to drink the purest nectar in an apiarian heaven. So powerful indeed is the scent from the thickly-laden branches of this stiff, contorted Broom, the rigid stems of which are implanted like bars of iron into the loose cindery stones amongst which they appear to revel, that not the bees alone, but every winged insect within a considerable distance, as though unable to resist the attraction, hurries off to the scene, to satiate itself, and to claim a share of Nature’s bounty.

But I need not pursue the picture further; for the provident “collector,” at the bare mention of the latter fact, would at once take the hint, and *look to his nets*. I can only say that *I* did so, and had no after reason to repent of that shrewd and sagacious step.

T. V. WOLLASTON.

Teignmouth, July 6, 1866.

Description of the Larva of Hipparchia Semele, with Notes on its Habits, Food, &c.—Eggs of this species were obtained in 1864 by Dr Knaggs, and sent to the Rev. J. Hellins on July 26th and August 3rd; some of them hatched August 8th, and

others continuously for three or four days. The larvæ at first were ochreous, with a blackish interrupted dorsal line, and fed on *Triticum repens*, were very sluggish, often hiding low down amongst the grass, and hybernated when about four lines in length. One larva only survived the winter, and was kindly presented to me on the 13th May, 1865, by Mr. Hellins, to whom I am indebted for the following account of it. The larva had shown a partiality for *Aira cæspitosa*, previous to my receiving it, and on this it was therefore placed, being then about eight lines in length. On the 20th of May I chanced to dig up a rather larger larva of this species from a waste piece of sandy ground near the sea, amongst *Aira præcox* and other small grasses, which rendered the task of rearing doubly interesting, in observing the habits of each, kept separate and on different food. The captured larva, on being placed under a glass in a pot with its native growing food, immediately burrowed in the sandy earth, and the few times it was seen on the grass was always at night, and each morning brought evidence of its doing well by the diminished grass. About the 14th of June these indications ceased, and on the 23rd I searched for the pupa, and found it in a hollow space a quarter of an inch below the surface, the particles of sand and earth very slightly cohering together, and close to the roots of grass yet free from them. The pupa was obtuse, rounded, tumid and smooth, the abdominal rings scarcely visible, and wholly of a deep red mahogany colour. The perfect insect, a male, appeared July 24th. The larva, reared wholly in captivity from the egg, always remained on its rigid food, with its head uppermost, when feeding, which at first it did day and night till it was an inch long, from which time it fed only at night, remaining all day at rest on the grass, with its head downwards, in comparative darkness, amongst the lower parts of the stems. It never showed any disposition to burrow, though the soil was supplied for the purpose, until it was full fed, about the middle of June. The butterfly, a male, appeared on the 5th of August. No material difference existed between the two larvæ, excepting that the captured one was rather less bright and distinct in colour and markings than the other. The full grown larva is an inch and a half in length, tapering much to the anal forked extremity and a little towards the head, which is globular. Ground colour of the back a delicately mottled drab, with longitudinal stripes, broadest along the middle segments, viz. a dorsal stripe of olive-brown, very dark at the beginning of each segment, with a thin edging of brownish white. Three stripes along the subdorsal region, of which the first is composed of a double narrow line of yellowish brown, the second wider, of the mottled ground colour, edged above with paler and below with white, and the third of a similar width of dark gray-brown, edged above with black. Spiracular stripe broader and of nearly equal width, of pale ochreous-brown, edged both above and below with brownish white. The spiracles black. Belly and legs drab colour. Head brown, on which the principal stripes of the body are delicately marked with darker brown.—*William Burkler*, in '*Entomologist's Monthly Magazine*' for January, 1866. [Mr. Logan, of Duddington, many years back published a very minute description of this larva and its economy, and a still prior account may be found in Sepp: the three admirably corroborate each other.—*Edward Newman*].

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

June 4, 1866.—Sir JOHN LUBBOCK, Bart., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—
 ‘Proceedings of the Royal Society,’ No. 83; presented by the Society. ‘A Catalogue of Phytophaga,’ Part 1, by the Rev. Hamlet Clark; by the Author. ‘On the Structure of the Egg in Scatophaga,’ and ‘Description of the Skin cast by an Ephemeron, in its “Pseud-imago” condition,’ by Tuffen West, F.L.S., &c.; by the Author. ‘Notes upon some Odonata from the Isle of Pines,’ by Samuel H. Scudder; by the Author. ‘New Species of North American Coleoptera,’ Part 1; ‘List of the Coleoptera of North America,’ Part 1; ‘On the Species of *Galeruca* and allied Genera inhabiting North America;’ ‘Note on the Species of *Myodites*, *Latr.*, inhabiting North America;’ and ‘Remarks on *Stylopidae*,’ by John L. Leconte, M.D.; by the Author. ‘The Zoologist’ for June; by the Editor. ‘The Entomologist’s Monthly Magazine’ for June; by the Editors.

The addition by purchase of the 131st livr. of the ‘*Genera des Coléoptères d’Europe*’ was also announced.

Election of Members.

Count George Mnischez, of Paris, was elected a Foreign Member. Osbert Salvin, Esq., M.A., F.L.S., of 16, Bolton’s Grove, West Brompton, and Thomas Turner, Esq., of 5, Dix’s Fields, Exeter, were elected Ordinary Members.

Exhibitions, &c.

The Secretary read a letter from Dr. Wallace, in which the writer expressed his regret that the drawing of the full-grown larva of *Bombyx Cynthia* given in his Essay on Ailanthiculture (Tr. Ent. Soc. 3rd Ser. vol. v. pl. xvi.) was not quite truthful, the reason being that the larvæ were not sent to the artist until the fourth week in October, when the weather had become wet and chilly and the food deficient, and the larvæ were in consequence half-starved and torpid; moreover, on their journey the gray-blue bloom was knocked off, and was not subsequently secreted; it had, therefore, been impossible for the artist to do full justice to the larva. Dr. Wallace added that he had had sent him some eggs of the Japanese oak-feeding silkworm, *Bombyx Yamamai*, the young larvæ of which had hatched out, and required his constant attention during the previous month.

Mr. Wilkinson read from the Report of Mr. Consul Zohrab on the trade of Berdiansk for the year 1865 (Commercial Reports received at the Foreign Office from Her Majesty’s Consuls, presented to Parliament, February, 1866), the following extract, communicated by Prof. E. W. Brayley, of the London Institution:—

“The appearance of a poisonous black spider amongst the wheat at harvest time created for a few days a panic among the labouring classes. Wages rose to double

their ordinary rate, and it was with difficulty the labourers could be induced to work. More than 300 persons were bitten by this venomous insect, but only three cases were reported to have proved fatal, and these deaths, it is supposed, are not to be attributed solely to the bite of the spider. Fortunately this visitation was restricted to one part of the town lands, otherwise the consequences might have been very serious. From some villages in this district news was received that the spider had also visited them. The bite of this insect was indicated by a hard white spot. The first symptoms experienced were alternate violent heat and cold, shortness of breath bordering on suffocation, an increased pulsation of the heart, and pains in the chest and back, then weakness in the legs and dizziness in the head. After a few hours these symptoms diminished, and in two days the patient was able to resume his work. The general remedy employed was to cup the poisoned part and liberally wash it with cold water. Some cauterized the place, but this remedy was not so efficacious, and it created, besides, a fresh wound. The first time this spider was seen at Berdiansk was in 1864, but very few persons were bitten by it. Last year, however, it increased to a most alarming extent. It was remarked that the spider was very active in killing locusts, on which it seemed principally to feed, and it was only when disturbed that it stung persons. The majority of the persons bitten did not know the cause of their illness, and it was only the same symptoms in each case that proved it to be the sting of the spider."

Mr. McLachlan exhibited the case of a caddis-worm which was found attached to a rush about two feet above the level of the adjacent water; it was of the genus *Limnephilus*, and he conceived that when, in accordance with the usual habit, the larva had fixed its case prior to the assumption of the pupa-form, the instinct of the creature had been at fault, and the larva had omitted to make allowance for the growth of the plant, by means of which the case had been raised above the water, and the pupa had consequently perished.

Mr. Stainton mentioned that from the galls on *Gypsophila saxifraga*, found at Mentone, of which he had exhibited a drawing at the previous Meeting (*ante*, p. x.), there had emerged two moths of the genus *Gelechia*, belonging to what he supposed he must call a new species allied to *G. leucomelanella*. The group of *Gelechiæ*, however, which fed on the *Caryophyllaceæ* were most difficult to deal with; new forms were continually discovered, intermediate between what have hitherto been considered distinct though closely-allied species; it was not improbable that other intermediate links would be supplied until the whole series, thus made continuous, would require to be united—should he say, into one *species*?

Mr. McLachlan thought the group in question was a good illustration of the "phytophagic species" of Mr. Walsh.

Mr. C. A. Wilson communicated a further instalment of his "Notes on the Buprestidæ of South Australia."

Prof. Westwood exhibited drawings of several species of Goliath beetles, which he proposed to describe, and for some to create new subgenera.

Mr. Pascoe exhibited two new species of *Articerus*, and read the following note respecting them:—

"Of the eight known species of *Articerus*, five are from Australia; three of these, described by Prof. Westwood, have short thick antennæ; another, described by the same author, has them remarkably curved; the species recently described by Mr.

Waterhouse has longer antennæ, but they are terminated by a compressed truncate club curved inwards at the apex. The two species before the Society have also long antennæ, but gradually enlarging from the base to the apex, in one of them, however, expanding rather more rapidly when approaching the tip; one is from Mr. Odewahn, of Gawler, South Australia; the other from the Rev. George Bostock, of Fremantle, West Australia; they may be thus differentiated:—

Articerus Odewahnii, n. sp.

A. pallide ferrugineus; capite prothoraceque subtiliter punctulatis; antennis basin versus abrupte angustioribus.

Long. lin. $\frac{3}{4}$.

Hab.—Gawler.

Articerus Bostockii, n. sp.

A. rufo-testaceus, elytris dilutioribus; capite prothoraceque subcrebre punctatis; antennis basi sensim angustioribus.

Long. lin. 1.

Hab.—Fremantle.

“The former has compressed antennæ, as may be seen by the section presented at the apex, whilst in the latter it is nearly or quite round. *A. Odewahnii* also has the head considerably smaller in proportion, and if examined sideways it will be found to be of nearly equal depth throughout; but the larger head of *A. Bostockii* begins to diminish under the eyes, and is drawn rapidly up so as to be scarcely more than half the depth at the apex. The elytra of *A. Odewahnii* are much smaller than those of the other species. In neither do the tibiæ present any appearance of angularity or toothing, but this may be because they are both females. Mr. Du Boulay thinks the antennæ are *flexible*, but in this Mr. Bostock does not agree. Referring to the species which I have named after him, Mr. Bostock writes as follows:—‘The first caught was found (when disturbed?) on his back, and two ants at once seized him to carry him to a place of safety. . . . I saw another on a stick protruding from an under-ground nest, and as I approached nearer to capture it I plainly saw two ants, one on either side, seize it and hurry it down the hole. . . . The latter specimen caught was resting with his body inclined at an angle of about 30°, and was bowing his head vertically and his antennæ laterally in a most amusing manner.’ Mr. Bostock thinks there is a ‘bag of ant-liquid beneath the fovea’ (cavity on the abdomen?).”

Mr. Pascoe also exhibited a small collection of Coleoptera from Fremantle, placed in his hands by the Rev. Hawlet Clark, to whom it had been sent by the Rev. George Bostock. In addition to the species of *Articerus* above described, the collection included *Anthicus strictus*, *Er.*, and two probably new species, found in ants' nests, being, as Mr. Pascoe believed, the first instance of an *Anthicus* occurring in such a situation; a beautiful new species of *Ptinus*, *Mezium sulcatum*, two new species of *Hyocis*, *Scopodes boops*, *Er.*; two species of *Platynotus*, one certainly and the other probably new; a *Cryptophagus*, two species of *Brachypeplus*, a *Scymnus*, *Uloma?*, *Platysoma*, &c.; an insect of unknown genus of the size and outline of *Corticaria ser-raticollis*, *Duval*, but with very peculiar tarsi; and a new *Mecynotarsus*, of which the following diagnosis was read:—

“*Mecynotarsus albellus*, n. sp.

“*M. testaceus*, pube densa alba tectus; parte prothoracis protensa breviuscula, ovata, dentibus quadratis rubris undecim instructa; elytris humeris producto-rotundatis; pedibus antennisque testaceis.

Long. lin. $1\frac{1}{4}$.

Hab.—Fremantle.”

But the most remarkable insect in the collection was an entirely new form, also found in ants' nests, for which the name of *Ectrephes formicarum* was proposed, and of which the following description was read:—

“*ECTREPHES*, n. g.

“Caput insertum, subtus inclinatum, fronte pro receptione antennarum profunde excavata. Oculi parvi, rotundati. Mandibulæ rostriformes. Antennæ tri-articulatæ; articulo basali breviter obconico; secundo minuto; tertio elongato, compresso, apice oblique truncato. Prothorax transversus, utrinque pone apicem emarginatus, lateribus carinato-alatis. Elytra breviter ovata, convexa. Femora et tibiæ compressæ; tarsi 5-articulati, elongati, filiformes.

“*Ectrephes formicarum*, n. sp.

“*E. omnino fusco-castaneus*; elytris nitidis, pilis minutis erectis valde dispersis.

Long. lin. 1.

Hab.—Fremantle.

“The position of *Ectrephes* is uncertain; the fact of the elytra closely embracing and covering the abdomen cuts it off from the Paussidæ; in its 3-jointed antennæ it approaches *Gnostus*, *Westw.*, another isolated genus. The antennæ arise from a cavity in front of the head, and the latter is so bent down that the mandibles almost touch the anterior coxæ. The metasternum is very short, and the intermediate and posterior coxæ are therefore closely approximate on each side, but widely apart as regards their fellows. The anterior coxæ are exerted, cylindrical and divergent. The abdominal segments appear to be only four in number, owing probably to the union of the second and third; counting it as one only, that segment is of large size, whilst the third is reduced to a mere line. I regret that I have not successfully extracted the mouth, but so far as I could judge the mentum was very small, with two large fusiform palpi; I could not distinguish the maxillary lobes, of which *Gnostus* has one only, and that very minute. I hope to give a figure of the insect, and to enter into further details on a future occasion.”

Prof. Westwood considered *Ectrephes* to belong to the Paussidæ, notwithstanding that the abdomen was entirely covered by the elytra.

July 2, 1866.—Sir JOHN LUBBOCK, Bart., President, in the chair.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—Hewitson's 'Exotic Butterflies,' Part 59; presented by W. W. Saunders, Esq. 'The

Zoologist' for July; by the Editor. 'The Entomologist's Monthly Magazine' for July; by the Editors.

The following additions by purchase were also announced:—Aubé, 'Pselaphorum Monographia'; Chevrolat, 'Coléoptères du Mexique'; A. de Norguet, 'Catalogue des Coléoptères du Département du Nord'; J. Thomson, 'Arcana Naturæ'; Westwood, 'Arcana Entomologica.'

Election of Members.

The Hon. Thomas De Grey, M.P., of 23, Arlington Street, and Christopher Ward, Esq., of Halifax, were elected Members.

Exhibitions, &c.

Mr. Stainton exhibited larvæ of *Laverna phragmitella* in a head of *Typha latifolia*; and specimens of the *Gelechia*, very like *G. leucomelanella*, bred from *Gypsophila saxifraga*, to which reference was made at the two previous Meetings.

Mr. Bond exhibited a specimen of *Dianthæcia cæsia* taken by Mr. Hopley in the Isle of Man, where the species had recently been discovered by Mr. Gregson (see 'The Entomologist,' vol. iii. p. 103).

Mr. Edwin Shepherd exhibited an old specimen of the same species, from Bentley's collection, labelled "*cæsia*," in the hand-writing of the late Mr. Bentley. This specimen was reputed to have been captured in Yorkshire; and the fact that it precisely resembled the specimens from the Isle of Man (which differed from the typical Continental form of the insect, and seemed to be a permanent variety) was in favour of the British origin of Mr. Bentley's specimen.

Mr. Bond also exhibited a *Phycita* captured in the Isle of Man by Mr. Hopley, and which he believed would prove to be a new species; specimens of *Sesia philanthiformis* bred from pupæ sent to him by Mr. Greening from the Isle of Man; and a series of bred specimens of *Papilio Machaon* from Wicken Fen, Cambridgeshire, remarkable for their large size, as were most of the specimens of that butterfly which he had bred during the present season.

Mr. Edward Saunders exhibited a collection of Mexican butterflies, amongst which were *Papilio Asclepias* and others of that genus, and a gynandromorphous *Euterpe* (sp.?), of which the right side was male, the left female.

Mr. S. Stevens exhibited *Dicranocephala Wallichii* from North India, and *D. Bowringii* from South China.

The Secretary read the following extracts from the 'Journal of the Society of Arts' of 29th June, 1866:—

"*Insect Wax*.—The trade in this article in China is large. In 1864, from the single port of Hankow alone, 5100 cwt. were exported. It is taken by the Chinese as medicine, but is principally used as stearine in the manufacture of candles. It is one of the most valuable of the many products of Sze-Chuen, being worth sixty and seventy taels per picul (133 lbs). The wax is deposited, for the protection of its eggs, by an insect which inhabits the trees on which the wax is secreted. The formation of the wax was a subject which occupied the especial attention of M. Simon, a French savant, who, a year or two ago, passed a considerable time in the interior, during which he is said to have traversed the greater portion of Sze-Chuen, and to have

reached the eastern confines of Thibet." (See Proc. Ent. Soc. 1853, pp. 93-95, as to this Coccus-product).

"Protection of Trees from Insects.—The following simple method of preserving fruit from the ravages of insects is recommended by the Imperial Society of Practical Horticulture of the Rhone, and by the director of the School of Arboriculture of the Parc de la Fête d'Or at Lyons. The quantity of fruit destroyed by insects that deposit their eggs in the blossoms is enormous. These creatures are said to have a great antipathy to vinegar, the mere odour of which is enough to drive them away, and, in some cases, to destroy them, and nothing more is required than to sprinkle the branches with a mixture of vinegar and water at the moment the blossoms begin to appear. The mixture recommended consists of one part of vinegar to nine parts of water, but as French vinegar is very strong, perhaps the amount of water should be less when English vinegar is used. When the liquids are well mixed, the solution is to be sprinkled over the flower-buds by means of a garden engine or syringe, or even with a watering-pot with a fine rose. M. Denis, the director of the school referred to, tried the experiment last year, and reports that fruit trees so treated were covered with fruit, while those to which the acidulated water was not applied bore scarcely any. The other remedy proposed is against ants and other insects which mount the stems of trees. Take common lamp-oil, and expose it in the sun for three or four days, or until it acquires a gummy consistency and very disagreeable smell, then with a small paint-brush paint around the tree at about two feet from the ground, a band of the oil two inches wide, repeating the operation for three or four successive days. It is said that this method will protect the tree for four years at least. Perhaps coal tar might be found to answer the same purpose."

Mr. Stainton said that he had recently received a communication from M. Millière respecting the injury done to crops of rye in the neighbourhood of St. Etienne; Dr. Maurice, of that place, had directed his attention to the subject, but being unable to detect the author of the so-called "epidemic in the rye," had applied to M. Millière. Mr. Stainton believed that the injury was caused by the larva of the Micro-Lepidopterous *Ochsenheimeria taurella*, which by burrowing in the stem caused the ear to wither away.

Mr. Pascoe said that last year (see 'Proceedings,' 1865, p. 90) he had read a note respecting insects alighting on the snow in high mountain regions, and sinking into it from the melting of the snow by the radiation of heat from the insect; in 'The Zoologist' for the present month, Mr. Albert Müller, in commenting on the above communication, quotes from F. von Tschudi's 'Thierleben der Alpenwelt' the following passage:—"Winged insects, which are often carried by the wind to the upper snow-fields, will sink into these sometimes two feet deep, and it has been observed that these creatures settle voluntarily on the 'firn' [that state of the snow when its surface is held together by thin plates or crystals of ice is so designated], extending their wings and limbs, and that they rest in this position at their ease without moving, it being probable that they enjoy the absorption of the oxygen of the 'firn.' If they are taken up and removed to a stone or a piece of wood, they will at once proceed to the 'firn,' where they extend themselves as if inebriated, and gradually sink in, (seemingly) in full enjoyment. Dug out of a depth of two feet, they sometimes get lively again very quickly; otherwise, if left to themselves, they soon perish and at once get decomposed,

and then the sinking in will cease. It has been tried to place dead insects on the 'firn,' when the body was found to swell up to a soft mass, then to shrink very much and afterwards to decay; after this the 'firn' closes itself over it, which does not easily happen with living insects." Mr. Müller suggests that the lumps of peat found in several of the holes were the sediment of the decayed bodies of the insects, perhaps increased in size by dust or fine sand so often carried by heavy gales; and adopts the theory that the holes were formed by the radiation of heat from the insects. Mr. Pascoe did not, however, believe that radiation alone would account for insects sinking to the depth of two feet; he thought that long before they reached such a depth they would have exhausted the heat already absorbed, and would be concealed from the sun's rays by the imminent snow, and thus be prevented from absorbing more heat. On the Monte Moro the holes were about an inch in depth.

Prof. Westwood had observed bees which had been tempted out of the hive by early sunshine to fall on the snow; becoming benumbed by the cold, they lay without action, and gradually descended, so far at all events as that the whole of the body was below the level of the snow.

Prof. Brayley (who was present as a visitor) criticized von Tschudi's explanation of the reason for the insects settling on the 'firn,' and wished to know whence the oxygen was supposed to be derived; he suspected that von Tschudi had in his mind the old and exploded notion that pure oxygen was given off during the melting of snow, or that the water of melted snow contained an extraordinary quantity of oxygen. Insects, however small, would from the texture of their wings absorb heat very readily, and when placed on the snow they would by radiation give it off again, probably with equal rapidity; the melting of the snow, the formation of a cavity, and the descent of the insect, would be the natural result; but he was not able to account for an insect sinking to the considerable depth of two feet, as mentioned by von Tschudi. He should like to ask Mr. Pascoe whether the diameter of the hole in the snow greatly exceeded the expanse of the out-stretched insect? He imagined it would not.

Mr. Pascoe replied that the insects, when taken out of the cavities, were wet and limp, and their wings became clogged together, so that he could not speak with accuracy as to their admeasurement; he thought, however, that the breadth of the expanded wings would be nearly equal to the diameter of the hole.

The President said that he also had noticed similar holes in the snow when crossing some of the Alpine passes, though at the time he had not bestowed upon them the attention which it now appeared they deserved.

The President called attention to a paper by M. Balbiani, published in the 'Comptes Rendus,' June 4, 1866, in which the writer propounded a theory that the Aphides are hermaphroditic. According to M. Balbiani's observations, each ovarian tube possesses an enlarged end which contains a group of cells; one of these, which occupies the centre and is surrounded by the others, is the most important, "*car elle représente l'élément générateur ou la cellule mère de tous les ovules qui, dans chaque gaine, sont destinés à se transformer en embryons;*" the peripheral cells nourish the central one; when the ovule enters the ovarian tube, it possesses a germinative vesicle and spot; the latter soon disappears, and after it the vesicle also; during this time many nuclei become apparent in the surface of the vitellus, and condense round themselves the homogeneous substance of which it consists; these are the blastodermic

cells, which at this period are not surrounded by any membrane; the cells increase in number so as to cover the whole egg; after awhile an opening commences at the posterior end, and from it some of the contents protrude like a hernia; a delicate membrane is then visible inside the blastodermic cells; the hernial portion forms a connexion with the epithelial cells, and, when this is done, the vitelline vesicle contracts inside the blastoderm and divides into two secondary vesicles, of which the posterior one adheres to the epithelium, while the other remains free; these vesicles or cellules are the embryos of the sexual elements; each covers itself on the surface with a generation of small cellules which grow and continue to develop others; the posterior group is male, the anterior (the free one) is female; the latter remain colourless and are smaller than the male cellules, which become green or yellow (this is the pseudo-vitellus of Huxley); the mother vesicle soon disappears, while the male one increases and constitutes a reservoir of fecundating corpuseles; up to this time the embryonal development has not commenced, but from this point it proceeds regularly until the birth of the young *Aphis*.

Prof. Westwood was reminded, by the mention of *Aphides*, of a circumstance which had recently puzzled him. He had at Oxford some rose-trees which did not grow in the spring, but had only lately thrown out shoots; no sooner did a shoot appear, no matter how minute, than a fine fat *Aphis* was found upon it, and though the trees were carefully cleaned daily, yet morning after morning a fresh *Aphis* was on each bud. The *Aphides* were all apterous; they could scarcely have been blown upon the plants by the wind, since they occurred so constantly, and always on the youngest buds; the roses were planted away from any overhanging trees or shrubs; and he did not think the insects were hatched on the buds, since this would under the circumstances have required a retardation of the development of the eggs in order to keep time with the retarded development of the buds; he could only conclude that each night they had crawled up from the ground, but it was curious that they should be found exclusively on the smallest last-developed shoots.

Mr. Edward Sheppard had noticed the same thing on the young buds of jasmine, as if the *Aphides* had been born on and with the buds.

The Rev. Douglas C. Timins communicated the following notes on the larvæ of *Charaxes Jasius* and *Melitæa Provencialis*:—

“It may interest some entomologists to know that I have succeeded in rearing the larvæ of the splendid *Charaxes Jasius* in England. In January of this year I obtained some young larvæ at Hyères. They grow very slowly, and in April were not nearly full fed. I brought them to England, and carefully fed them with *Arbutus Unedo*, placing their cage in the sun (they only feed in sun-light, as far as I have observed), and about the 15th of May some of them assumed the pupa state. On the 5th of June two specimens emerged; one, however, had the wings crippled. I have also bred *Hesperia Althæa* and *Melitæa Provencialis*. The larva of the latter has not been described; its length when full fed is about an inch and a half; head black; body black, velvety, the back powdered with white dots; a stripe of white dots along each side; numerous jet-black spines on each segment; fore legs reddish brown, hind legs red; in societies, on *Lonicera Balearica*. The pupa is remarkably handsome, being white, with golden yellow rings chequered with black on each abdominal segment, and having the wing-cases marked with golden yellow and black; it is of course

suspended by the tail. The larvæ were obtained at Hyères on the 21st of March, changed to pupæ at Hyères between the 2nd and 7th of April, and the first imago emerged at Winchelsea on the 6th of June. *M. Provencialis* appears to be merely a local variety of *M. Desfontainesii*, or perhaps *Provencialis* is the type, and *Desfontainesii* the variety."

With reference to the last remark, Mr. M'Lachlan observed that *Melitæa Desfontainesii* was commonly considered to be only a variety of *M. Artemis*; an opinion in which Mr. Bates said that he concurred.

New Part of 'Transactions.'

A new part of the 'Transactions' (Trans. Ent. Soc., third series, vol. v. part 3), being the third Part published during the present year, was on the table.—*J. W. D.*

Note on the Shrew (Sorex rusticus?).—I picked up lately, dead, on one of our marsh roads, two shrew-mice, belonging apparently to a distinct species from either the water or oared shrews, as described in Bell's 'British Quadrupeds.' I found the little animals sitting face to face in so perfectly natural a position, that it was only on taking them up I satisfied myself they were really dead. They were both males, full grown and in good condition, except a slight stain of blood on their chests, exhibiting no trace whatever of ill usage. I am quite at a loss to account for their death, and can only conjecture they may have fallen in deadly combat, having fought it out to the bitter end. I find these little quadrupeds exhibit most nearly the characteristics of a shrew described by Mr. Macgillivray, in his 'British Mammalia' (vol. xvii. of the 'Naturalist's Library'), and, as he there states, first described by Dr. Fleming in the second volume of the 'Transactions of the Wernerian Society,' under the name of *Sorex fodiens*, and again in the Appendix to Macgillivray's work they seem identical with the specific characteristics given of the square-tailed shrew (*S. tetragonurus*), as named by the Rev. L. Jenyns, in his paper on the British shrews, published in the 'Annals of Natural History' (vol. i. p. 417). Appended I give their exact measurement and specific characteristics, trusting that some reader of the 'Zoologist' will be able to identify and name them for me:—

| | | |
|--|-------|---------------------------|
| Length of shrew from nose to end of tail | . . . | 4 $\frac{11}{20}$ inches. |
| " body without tail | . . . | 2 $\frac{13}{20}$ " |
| " tail | . . . | 1 $\frac{9}{10}$ inch. |
| " from ear to end of snout | . . . | $\frac{9}{10}$ " |

Incisors red at the tip; fur very close and velvety. Colour above black, below gray, the black colour of the back gradually merging into the gray of the under parts, and not marked by any decided line as in *S. fodiens*; a dark spot near the centre of the throat, with a streak of the same colour running down the centre of the belly; a dark triangular spot at the base of the tail. Tail quadrangular, slightly compressed towards the tip; the under parts of the tail covered with very short and close silvery hairs, the sides with short close dark hairs; the upper part of the tail was entirely destitute of hair, except near the end, where it was covered with dark close hairs as on

the side. Ears small and buried in the fur, a white spot of fur marking the place. Eyes extremely small and buried in the fur, a small white hair spot above each eye. Whiskers long and silvery. Snout lighter coloured than the back, a rather indistinct and broad streak of the dark back colour running down the centre of the nose. Muzzle black. Feet large; toes bordered and covered above with silvery hairs; under parts of feet gray; claws white.—*John Cordeaux; Great Cotes, Ulceby, June 23, 1866.*

Letters on Ornithology. By HARRY BLAKE-KNOX, Esq.

LETTER II.—*Being a detailed Account of the Summer Plumages of the Shag; also an Account of its Habits in Confinement.*

This letter by right should have been on the cormorant, but as there are still some little things respecting this bird that I am not quite confident of, and as I shall never write without proof and honesty, I must forbear for a time longer before sending my letter to the publisher; I therefore take this opportunity of adding some plumages to my already long list of the changes of the shag. I find that without these additional plumages my Natural History would be wanting in clearness and decision, but that with them any one can trace and distinguish the bird at all seasons. I allude to the second, third, and adult summer dress.

Addenda.—The following words were omitted in copying, on account of the italicizing lines running partially through them:—Page 254, No. 5, Link 2. * * * * “This family never moults on the back or breast *except during the summer moults of the young, and the autumn moult of the adult*, but the feathers grow, as it were, without dropping out. In youth the feathers wear out and revive again, but in the adult they never fade much. I have a beautiful specimen of the shag now before me, in second winter, showing transmutation beautifully and lucidly. The head, neck, quills, tail and some of the large scapulars moult, also the down of the entire body *yearly (for some adult shags do not moult anywhere else)*; but the feathers of the shoulders, back, scapulars, rump, wing-coverts, &c., the breast, sides, belly, &c., never, to my knowledge, fall from the bird, *except as above, the various winter plumages taking place by transmutation; lost feathers are always being renewed by moult.* Adults do not necessarily moult anywhere, but the quills, the crest and the down, in the year. These omissions must be pardoned, as I

wrote in great haste at the time, in a strong gale in the cabin of a trawler, and while italicizing must have drawn my pen unequally through instead of under the words. So incessant are the transmutations and fadings of the feathers of the immature shag that I find, for the thorough practical ornithologist, I have hardly detailed closely enough the second and third summer plumages of the bird; but with the following additions to my first letter I flatter myself that no future writer can be more exact.

After No. 8. *Second Summer. One year old.*—June.

Add No. 8 $\frac{1}{4}$. *Second Summer. One year old.*—June. Though healthy birds, by the middle of June, have generally changed the plumage of the back, scapulars, shoulders and rump, yet in many cases some of the first winter feathers, worn to skeletons, still remain, and again in others none of the under parts have by this time begun to fall out. This class can be confounded with no other age. (In collection).

No 8 $\frac{1}{2}$. *Second Summer. One year old.*—June. Since October a constant transmutation and fading of the feathers have been going on (Nos. 5, 6, 7, 8), till, by the middle or latter end of June, the feathers after living a year fall from the bird. From the middle of June many new feathers have come through the old plumage and by moult. The new feathers are like the adult in the back, scapulars and rump; those of first winter that transmuted from February to the adult colour are now very faded and generally fringed with tawny, and those that never transmuted are uniform dirty brown. In the wing-coverts the new feathers are like the adult's, but fringed with tawny from the pen. The new feathers of the under parts are mouse-colour, often with tawny fringe. (In collection). This plumage is very transient and fades very quickly.

No. 8 $\frac{3}{4}$. By end of July and beginning of August this moult is over, and the feathers first moulted very faded.

Now No. 9. *Second Autumn. October.*

After No. 13. *Second Spring. May.*—

Add No. 13 $\frac{1}{4}$. *Second Spring.*—End of May. A very faded addition of the adult, and easily known from it at a glance by the dingy under parts, *often* by the *white chin still*, rarely by a *pale vent*, frequently by the bare flesh at bill not yet turned *black*.

No. 13 $\frac{1}{2}$. *Third Summer.*—June. Much more faded than in May; the under parts have faded to blackish brown, and even mouse-colour, sometimes the fringes have become tawny and the vent grayish. The

skin at under mandible has turned the *colour of the adult*,—*black with yellow warts*; the feet have grown *much darker*. The old feathers of the scapulars have become dead, and look as if *dirtyed with mud*. The coverts have faded to brown, and the rest of the plumage of the upper surface has faded from the adult green to dull green-brown. (In collection).

Diagnosis: between Second and Third Summer.—This age *sometimes* looks like the second summer at the same time, particularly should the under parts of the third summer have faded to *mouse-colour* and the vent to *whitish*. The italics are sufficient diagnosis—the old feathers of second summer wearing to *brown-green* with a *tawny fringe*, and those of third summer appearing as if *muddied*, unlike any other stage. Should any of the first winter feathers untransmuted still be in the scapulars no diagnosis is necessary.

No. 13 $\frac{3}{4}$. *Third Summer.*—June. Since last June the old feathers have undergone the autumn fade (No. 9); the transmutation from November till February (No. 10—13), and the fade to June, when they die, after a life of a year. By the middle of June the moult begins; and is finished generally by August, sometimes in July. The new feathers are like the adults, but fade. (In collection).

In No. 13, had I written April instead of May, and in No. 14 August for July, I should have matched the greater bulk of the bird better, but as it is they are correct. Do not censure me, ye who know not the sea-birds, but bear in mind that if a bird's eggs are taken the future young will be a fortnight late; if the young, a full month or six weeks; only for this the plumages would run "as smooth as a marriage bell."

No. 19. Adult in June. The crest is lost after hatching, not because the young are hatched, but because it has worn out. If the bird was robbed of its young it would undoubtedly breed again without any crest. One bird shot on the 27th of June, off the nest, had one crest-feather still in the head and several stumps. The other plumage is so in January. In birds of three years old the plumage of the scapulars becomes muddy, and is undoubtedly renewed in the autumn. Many adults do not moult anything but the quills and large scapulars and the crest, the rest of the plumage transmuting. In very old birds the bill is all black. The adult moult begins after the young leave the nest. (In collection.)

The Shag in Confinement.—In confinement the shag, notwithstanding all that is said to the contrary, is easily tamed, as I have

often proved, and very rare and interesting pets they make, if plenty of room and water be given them, with a free use of their wings and an abundance of fresh fish. I have kept many shags and cormorants, but have too often been obliged to set them at liberty during spring, on account of the great difficulty in obtaining fish: for weeks here, in spring and winter, we dare not go to sea. Any that I have kept have been taken from the sea, and never from the nest, most generally by a slight wound in the head; two were from the throats of the angler (*Lophius piscatorius*). Last winter I kept five; one got drowned, three died from being fed on bad fish, and one only remains with me now. One of those that died was a most interesting bird—a female, though, notwithstanding its sex, christened “Dick” by my butler (who, by the bye, is an original Irishman, a bit of a Micky Free, and as fond of birds as his master). Well, poor Dick first came to know this character by a grain of his No. 2 shot passing through one eye and out of the other. Though his tears could not cure or alleviate the poor thing’s sufferings, still his unremitting future kindness, and a little of my healing art, did in the end totally restore Dick to health, but never to sight. For four days she never moved from a standing posture on a “crab cleave,” with the bill buried in the feathers of the back. At the end of the fourth day we forced a herring down her throat, and from that out two a day; on the sixth day she showed no more affectation, but took the fish herself, and from that out Dick was a tamed bird. Very soon, too, Dick came to know her name, and a “Come, Dick,” would rouse all her energies, and she would come direct to the voice, even feeling her way round corners by her bill, as a blind man would with a stick. When at your leg she would gently pull your trousers, as if fancying you were blind too, and did not know that she was beside you. Soon the human voice became music to Dick, and from the yard she would grope her way into the kitchen, to the fire, where the women would be talking, and stand on one leg before the genial blaze or extend her wings to it. All her actions were directed by the bill, and, as I said before, it acted like a blind man’s staff to her. She could find her way to her pond in the morning, and wash in it, or grope about in it for pieces of fish, which when the bird touched she knew from anything else. So sensitive is the feeling power of the bill that pieces of fish were never swallowed against the scales, but invariably turned in it by a succession of small catches. This lasted for a time, but, like all pets, female Dick died, after a feed of stale conger. Other birds with sight became equally

tame with Dick, and would never attempt to fly away. About eight each morning, with a dish of fish, I go into the aviary, and am set upon by shags, gulls, cormorants, magpies and a kestrel falcon, all striving for their share, for I have them piscivorous, even the falcon; a dozen of herrings are thrown into the pond, and every shag is beneath the water in an instant, sometimes even snapping the fish before it touches the water. Should the fish be large I cut them on the top of a shed, which acts the part of a cave for the shags, and with the magpies on my shoulder and the cormorants and shags on the shed, I have a busy time to give each his due. So fearless are the shags that they will take the fish from under the knife; their dart is unerring, and if fish be thrown them it is unfailingly caught before touching the ground, and so quickly that no opening of the bill can be seen. After feeding they invariably wash, thoroughly saturating the feathers by striking the closed wing on the rump, lying on one side and splashing round and round, beating the water with outspread wings and diving. When well drenched they get on the edge of the tank, the water dripping off, and furiously shake the wings, and wag the tail till it sometimes hums; they then stand with the body horizontal and beat the closed wings on the back. The sun is next sought for, and the highest point to perch on attained; here the wings are spread and fanned, the feathers preened and insects removed. They are fed again at two and again at six, so that their lives are made up of feeding, washing, drying and sleeping. In winter they always stand, but in the breeding season they lie down and also squat like the divers: this habit, in May and June, has struck me very forcibly, as being a means of Nature to naturalize the bird to the incubating position, for females of a year old will thus sit for hours, the same as adults, and only in these months. Another strange thing is the much smaller quantity eaten in summer than in winter: this I cannot but believe an economy of Nature, adapting the bird to privation itself that it may not stint its young. Once the bird has gone to roost you could not persuade it to eat another morsel. When very hungry their loud hoarse "gauk" is repeatedly uttered, and woe to the stranger that enters the aviary: at these times the eyes attain a most malevolent sparkling look, and the bird is not the thing to play with. The hook of the bill can be driven through the hand, and the edges of the mandibles will cut like a knife. One of the ugliest cuts I have ever seen given was by a shag, the large vein on the back of the hand being torn up. To those they know the cry is low, rather musical,

but hoarse, and speaks affection as plainly as words. Among themselves they rarely fight, but show no friendship to the gulls, who always are ready to attack and rob them when trying to swallow a fish. The gull is generally victorious, and will often pull a herring from the shag's throat, but sometimes a broken leg or wing is the only reward for his temerity. Not one of them dare touch the kestrel. Should I go out to them with a yellow oiled calico suit and a sou'-wester on, they will dart into the water and remain under a minute or more at a time; so saturated are the feathers by this submersion that the bird looks as if made of gutta percha: its travelling speed when thus wet must be enormous, as it gives no resistance to the water. At other times they will follow me like dogs. When jumping out of the tank the tail only is sometimes used; it is widely spread, and by a downward stroke jerks the bird out of the water. In climbing the hook of the bill is used, and this must be very useful when the bird builds in holes, as it does frequently at Lambay. Short as this account is, I hope it will please those who asked me to write it, but the many little things in the habits of the shag that could not be described clearly on paper, will reward any one, should they even have to pay £4 or £5 a-year for fish to keep them: a clear idea of transmutation is cheaply bought at this sum. The best time for that is in the second winter.

HARRY BLAKE-KNOX.

Dalkey, County Dublin, June, 1866.

Errata in Letter No. 1.—Page 246, line 31, "shots," not "shot." Page 249, line 8, "lays," not "lugs." Page 254, line 28, "tint," not "tail." Page 257, lines 4, 5, 6, I did not write "mandible" in the plural. In the heading of the letter the author wrote "genus" instead of "species."—*H. Blake-Knox.*

Ornithological Notes from West Sussex.

By W. JEFFERY, jun., Esq.

(Continued from S.S. 260.)

MAY AND JUNE, 1866.

May 1st. Flycatcher and turtle dove appear.

May 3rd. Nightjar appears.

The first few days of May were bitterly cold, to such an extent even that swallows, in many places, died from its effects, and others were knocked down with sticks, &c. I imagine that the cold, having cut

off their supply of food, in the way of insects, was the primary cause of the swallows suffering. Nevertheless the flycatcher, turtle dove and nightjar were here early, though the flycatcher, which I saw on the 1st of May, looked dreadfully cut up.

Golden Oriole.—This species appears to have been observed pretty well all along the south coast this spring. On the 5th of May a pair, male and female, were killed at Sidlesham, about five miles south of Chichester. There is a female in the Chichester Museum, which was shot near the same place in May, 1853, about which period several others were obtained in Sussex.

Nightingale.—May 13. Found a nest of this bird, three feet from the ground, built in some dead wood which had fallen on a heap of bramble. Hitherto all the nests of this species which I have seen *in situ* have been on the ground, or at least only slightly raised from it by decaying vegetation or something of that nature. Yarrell says its nest is "almost always placed on the ground." But in a small work which I have seen, by the Rev. J. C. Atkinson, that author states, as the result of his experience, that it is *not* usually placed on the ground. It would be interesting to ascertain if the placing of its nest varies in different districts.

Grasshopper Warbler.—I was so fortunate, on the 19th of May, as to find, quite accidentally, two nests of this warbler. It is generally understood that its nest is extremely difficult to find: neither of these nests, however, was concealed with greater care than the nest of the common whitethroat usually is, both being built in tufts of coarse grass, the tops of the grass just drooping over the nest. These nests were situated in a small wet copse, where the underwood is patchy and the bottom thickly overgrown with grass. Another nest of the grasshopper warbler, which I found on the 16th of May, 1864, was placed in a small thick crab-bush: this also I discovered by accident, and although I have spent hours in looking for their nest, have never found one when actually searching for it. These three nests each contained five eggs when taken. The grasshopper warbler is not by any means numerous here, but is to be found in various localities, from the top of the downs to the vicinity of the sea-coast.

Waders.—During the last fortnight in May the waders were very plentiful about the coast and harbours, many of them in full summer plumage, others in the transition state. The cold north-easterly winds that prevailed at this time probably induced them to linger about the south coast longer than they are in the habit of doing while on the

vernal migration. Amongst others gray plovers, some in perfect summer plumage, in which state they are not unfrequently met with at this season; turnstones, in flocks of fifteen to twenty; sanderlings, rather scarce (one obtained on the 25th in full summer dress); oystercatchers, curlews, whimbrels, redshanks, greenshanks, bartailed godwits and knots: neither of the four last named were very plentiful, but examples obtained in pretty good plumage.

Terns.—Terns have also been pretty numerous: one man shot thirteen lesser terns at two shots.

Oystercatcher.—The stomach of an oystercatcher, examined on the 22nd of May, contained cockles out of the shells. The bill of this bird seems admirably suited to its work, but whether it is strong enough to entitle it to its name of "oystercatcher" I am not prepared to say. The ends of the mandibles must, of course, wear away with constant use, and consequently must in some way be renewed. This, I am inclined to surmise, is effected by a gradual growth, after the manner of our own finger-nails. I remember having, a year or two ago, seen some of these birds in the Gardens of the Zoological Society, in Regent's Park, and remarking that their bills were much elongated—to such an extent even that the mandibles crossed at the tips, something like those of the crossbill: in their state of captivity, seemingly, these birds had not sufficient work for their bills to keep them worn down as Nature had intended.

Dotterell.—Mr. Cordeaux asks (S. S. 294) for information respecting the dotterell. I can only supply negative information, *viz.* that it is not a plentiful species in West Sussex. On the 25th of May, 1859, three examples were procured at Runcton, near Chichester, of which I have one, a male. Since that time I am not aware of its having occurred in this part of the county. It would appear to be rather more common in East Sussex. Mr. Knox, in his 'Systematic Catalogue' of Sussex birds, says, "Several are killed every year in the neighbourhood of Alfriston. Is frequently met with near Hailsham and Battle. Rare in the western division of the county. The line of its vernal migration would appear to be north-east. Does not breed in Sussex," &c. Probably since this was written it has become more scarce. Mr. Dutton informs us (Zool. 9099) that it occurs "occasionally" in the neighbourhood of Eastbourne.

Egg-destroyers.—In the last number of the 'Zoologist' (S. S. 310) an instance is given of a cuckoo sucking partridge's eggs. One would have thought that the shell of the partridge's egg would have proved

too strong for the bill of the cuckoo to pierce, but here we have plain evidence of the fact. I have frequently doubted if the cuckoo really does suck eggs, and perhaps others may have shared this doubt; for though I have often found egg-shells of blackbird, thrush, &c., in places frequented by cuckoos, I have always failed in actually proving the cuckoo the culprit. But the cuckoo does not stand alone in this egg-destroying propensity, for besides several of the crow tribe, which are well known to be adepts at it, some of the smaller birds, and I incline to think quadrupeds, are depredators in this line. A pair of robins built a nest and laid eggs in our garden this year, as did also a blackbird; in both these cases the eggs were destroyed by sparrows, perhaps more out of a love of mischief than from a liking for their contents. I also knew of a chaffinch's nest, built in a rustic porch, which was demolished by sparrows, both nest and eggs, and the materials used in the construction of their own nest. Frequently we find eggs of some of the smaller birds pierced by a small bill (?), the contents gone, and the shells left in the nest. Who is to bear the blame for this? I think not the cuckoo, for the holes are too small to have been made by a cuckoo's bill. Now for the quadrupeds' charge: the wood and willow warblers and the chiffchaff, which build on the ground, suffer most from this source: the eggs are broken,—not merely sucked by means of a small hole,—and the fragments generally left just outside of the nest. Oftentimes the lining of the nest is scratched out. I have found several nests served in this manner during the present season, and in one case the feathers of the rightful owner (a willow warbler) lying about, showing plainly that she had not escaped with her life. I cannot help accusing mice in these instances. The only wonder is that, with so many enemies, the poor birds keep up their raucs so well as they do.

Nests of Willow Warbler and Chiffchaff.—These nests vary so much in their construction that at times one gets puzzled to distinguish the nests of the two species, more especially as the eggs vary considerably also. The nest of the chiffchaff is usually, but not always, more profusely lined with feathers than that of the willow warbler, the exterior being in most cases composed of the dry blades of a broad thin grass, while the willow warbler's nest has generally a portion of green moss in it, but I have found nests with the exterior composed entirely of dry fern-leaves. The willow warbler's eggs vary more than those of the chiffchaff, some being closely freckled with minute spots of a light red colour, others sparingly dotted with

larger spots of the same colour; others again with the large spots of a deep rust colour, very nearly resembling the chiffchaff's, which range from blackish purple to rusty purple. The willow wren is much more numerous in this part than either the wood warbler or chiffchaff.

Moorhen.—May 20. Second brood hatched. June 20. About this time the parent birds drove the first brood away.

W. JEFFERY, JUN.

Ratham, Chichester, July 7, 1866.

Ornithological Notes from the Isle of Wight.

By CAPTAIN HADFIELD.

(Continued from S. S. 220).

APRIL, 1866.

Linnet.—April 4th. This species is still gregarious, a considerable flock having been observed to-day. 25th. Though a small flock was seen they have begun to pair, but the males have not yet acquired the bright roseate hue—the “plumage des noces.”

Wood Wren.—5th. One was seen at Luccombe.

Wryneck.—8th. First observed.

Pied Wagtail.—Paired early in the month, a nest having been found in the ivy on a house, where a pair has been known to breed for some years; probably the same couple.

Longtailed Titmouse.—11th. First observed to be paired.

Swallow.—12th. A swallow seen flying about the meadows by the sea-cliffs at Bonchurch (the first swallow was last year observed on the 10th). Thermometer 51° at 9 A.M.; wind westerly.

Nightingale.—Heard on the 13th, at Steephill Farm, and my informants (the farmer and two of his men) assure me that they were in considerable numbers, as their song was heard in all directions for two or three days: they then dispersed, probably proceeding inland, but a few, I believe, still breed in the neighbourhood. Though not heard till towards the middle of the month, they may have arrived some days before, as they are said not to be in full song until about to pair.

Goldfinch.—Paired by the middle of the month.

Willow Wren.—18th. One observed to-day in the Landslip.

Kestrel.—There has been a great accession of numbers during the month.

Blackbird, &c.—Had young fully fledged by the middle of the month. Observe that the male bird feeds the hen while sitting on the nest. Birds have been sadly puzzled when and where to build their nests, the weather being so variable, and the season so backward. No sufficient foliage of any kind but ivy, and evergreen shrubs. Two pairs of blackbirds have built nests in the ivy on my house; one near the eaves. There are four of their nests within a very narrow circle, so their cheering song may be heard early and late, and occasionally at midday. When the female finds she is observed, the building material is dropped before flying off.

Cuckoo.—On the 19th this harbinger of spring was first heard.

Swan.—My observations on the cygnet have been most abruptly terminated, it having, on the 20th, left its mate on the Bonchurch Pond about mid-day, and wandered along the public road for some distance before taking wing and alighting in the sea; though followed and pursued, the boatman could not get near it, and there is now little chance of its being captured. It was a remarkably fine bird, larger than its adult companion, and being, I believe, a male, was probably driven away. This being, I am informed, the second time the old bird has been disappointed of a partner, one cannot be surprised at his resenting it. When the cygnet was seen, a few days since, the bill was mostly of a pinkish colour, with little appearance of orange.

Moorhen.—21st. One observed about the Bonchurch Pond; the first seen there for some years, though formerly a common species enough.

Dartford Warbler.—25th. Though old birds were seen both yesterday and to-day no young have been observed as yet.

Great Titmouse.—25th. First observed to be paired.

Chiffchaff.—Has been unusually abundant throughout the month, flitting among the leafless branches of the loftier trees, and making little aerial excursions, in mere sport, I believe; while the goldencrest, which it sometimes resembles in size and habits, may be seen beneath, in search of its insect food in the budding spruce.

Yellow Wood Wren.—25th. A bird of this species first observed; two more were seen on the 26th in the willows and oaks at Luccombe.

Lesser Blackbacked Gull, Kittiwake, &c.—27th. After a close inspection of the whole face of the Culver Cliff to-day, I find that no

gulls are nesting, though some forty or fifty of the above species have assembled; the kittiwakes in the proportion of three to one. Though no nests were found, the latter are evidently paired, as I observed them alight in couples, and they would sit preening their feathers side by side; besides, the male is readily distinguished, at a short distance, it being considerably the largest, though Macgillivray says it exceeds the female in length by half an inch only, and measures but one inch more in extent of wings. The raven, kestrel, daw and starling were observed in and about the cliff. The latter species has greatly increased of late years; I can remember when it was an uncommon, not to say rare, bird in the under-cliff. Numbers of swallows were seen by the way, but no martins.

Whitethroat.—Appeared about the middle of the month, but few were observed till towards the latter end.

Swift.—30th. The swift has preceded the martin, one having been seen to-day flying low, against an easterly gale.

Rook.—This species, I find, had young by the middle of the month.

MAY, 1866.

Green Linnet.—May 3rd. Observed to be nesting. This species, as well as many others, is very late in breeding, owing to the want of foliage and the low temperature; thermometer 42° only yesterday at 9 A. M.

Sparrowhawk.—4th. A nest was found to-day among the upper branches of a moderately sized beech, though the trunk was too large and smooth to be readily climbed. One of the birds was seen near the nest, which is but imperfectly concealed, the tree not being in full leaf. In a former note I mentioned having seen a sparrowhawk chased by wagtails; I have twice lately remarked the same thing. The missel thrush, another pugnacious species, will not allow a hawk to approach its nesting haunts. The moss-covered nest of this thrush, though built in the fork of a leafless tree, is not readily discovered.

Martin.—No martins were seen until the 6th, when three or four were observed about the houses on the cliffs, where three pairs bred last season, as recorded; they were flying round and over the buildings, closely inspecting the sites of their former nests; for that they are the same pairs which built there last year there can be little doubt, or why should these houses be now preferred to all others? On

one there is no appearance of last year's nest, and on the other there remains but a portion of a shell, the second having been blown down or swept away by the torrents of rain.

Sand Martin.—7th. The first seen to-day.

Dartford Warbler.—7th. Though this species has young I have seen none on the wing, but observed to-day an old male carrying food.

Whitethroat.—7th. This species is more than usually abundant : in a stroll over the Downs to-day I saw a great number ; indeed there was hardly a good sized furze-break without a pair or two.

Swallow.—11th. I do not think that this species can have commenced nesting, innumerable swallows having been seen to-day, after a heavy fall of rain, hawking over the water-meadows near Brading ; but that they will shortly disperse there can be no doubt, few breeding in the neighbourhood.

Gray Plover.—11th. A pair of strange birds observed near Lake, but at too great a distance to be identified ; however, later in the day they were again seen near Shanklin ; I had but a momentary view, but that they were gray plovers I have little doubt, though not usually met with at this season.

Spotted Flycatcher.—19th. A pair first observed.

Rook.—The young did not leave their nests till the second week in May. It may be worthy of remark that these remade and repaired nests are smaller than usual, some being barely large enough to hold the young. Rook shooting commenced about the middle of the month.

Nightjar.—21st. A fine bird of this species was found this morning in a spare room on the ground-floor, having entered by the verandah-door, which had been left open till a late hour in the evening. The verandah, being thickly covered with ivy, harbours moths, which it was probably in pursuit of, or it may intentionally have taken up its quarters there. My attention was first drawn to it by hearing a strange rustling noise, and on approaching the window I found it fluttering, like a huge moth (which it somewhat resembles) against the panes of glass. I had no difficulty in securing it, as it neither pecked nor scratched, but, drawing back the head, made a kind of hissing noise, together with a hoarse sound from the throat. Though a truly nocturnal species it can discern objects at a short distance at noon-day, under a bright sunshine, for I observed that in flying round the room it would avoid the angles, though occasionally coming in

contact with the ceiling, by which the wings at the flexure were slightly injured: even the pointing of a finger would cause it to hiss. The buoyancy of its flight inspires one with wonder and admiration, that of a moth hardly realizing it. I know of no bird whose plumage will bear a closer inspection, and thus to gaze on a living specimen, in perfect adult plumage, is a treat that even an ornithologist does not often enjoy. There was a sleepy look about the eyes, but towards night it became lively, and on being released darted off, though with a wavering flight, its huge wings occasionally brought together till meeting at the points, after the manner of the pigeon tribe.

Herring Gull, &c.—26th. On revisiting the Culver Cliffs to-day no gull but the herring gull was observed, and even of this species I do not believe that more than ten or a dozen pairs breed there now. On approaching the edge of the cliff two ravens rose from beneath, and their constant croaking and excited manner led me to think that their young could not be far off, and on looking over the precipice I saw a pair, almost full-grown, sitting on a ledge. Though pretty strong on the wing, when alighting they had some difficulty in obtaining a footing on a crag, and would reel about for a second or two, the pair always settling down together. The kestrel was again observed, but no peregrine falcons have I found about the cliffs, either this year or the last, though said to breed here regularly by more than one compiler of lists; however, a partridge's feather was picked up to-day on the edge of the cliff, and on a former occasion the well-picked bones of a partridge were found on the brink. Wagtails, pipits and several other species are breeding in the cliffs. On my way to the Downs I observed a pair of stonechats with their full-fledged young about them: seeing me the male flew off with the brood, while the female kept flitting on before me from bush to bush for a considerable distance.

Swan.—27th. Observing the swan on the Bonchurch Pond rushing about in a wild state of excitement, leaving a long line of broken water in its wake, I imagined that some dog had frightened or pursued it, but seeing it occasionally pause in its mad career to tear away the feathers from its flanks, I have no doubt that ticks, or other parasitic insects, were the cause of these unusual and eccentric movements, though not aware that the pure and spotless swan, like some other species, was thus afflicted.

Bluethroated Warbler.—In a former note I referred to a second

bird of this species having been seen at Bonchurch: I have since ascertained that the new-comer is a male, too, having heard its song.

JUNE, 1866.

Lesser Blackbacked Gull, &c.—In the May notes I remarked that no gull but the herring gull breeds at the Culver Cliff, and other writers have said the same; but I find, by a recent visit to the spot, one pair of [lesser] blackbacked gulls still nesting there, and I moreover observe that there are at least double the number of herring gulls that I and others had supposed; but I might again have come away with a wrong impression had I not chanced to shoot a meadow pipit near the edge of the cliff. No sooner had I fired than herring gulls rose in all directions, open-mouthed and excited, screeching at me in most discordant notes, which may be likened to laughter, but when heard so near, and from so many throats at once, has anything but an agreeable sound. I was soon surrounded by about forty of them, some, in darting to and fro, venturing within thirty yards of me, but the two lesser blackbacked gulls, though occasionally mingling with the rest, generally keeping more aloof. No kittiwakes were seen. This lofty and inaccessible cliff is a favourite haunt of the meadow pipit during the breeding season: the specimen procured is a female, and both quills and tail-feathers are so worn and abraded that there is no making out which are the longest. On dissection it was found, as anticipated from the ragged state of the plumage, to be a female, the ovary filled with a cluster of eggs, mostly very minute, the largest not much exceeding a pin's head in size. In the gizzard was found nothing but beetles: thus we have in the pipit another benefactor.

[These are the beetles from that most injurious grub, the wire-worm: they were of three species, *Agriotes Sputator*, *A. obscurus* and *A. lineatus*.—*E. Newman*.]

Martin.—Though the martin arrived early in May, it did not commence building till the latter end of the month, the weather being unseasonably cold: thermometer 50° on the 26th, at 9 A. M. On inspecting the nests, on the 4th of June, I found three in different stages of advancement; one an old nest undergoing repair; the second, in its half-finished state, looking like a gorget reversed; the third but recently commenced. 9th. There are now six nests on the same house, which I can only account for by ascribing to a social habit, there being a loftier and apparently more suitable building close to it; besides, the

one selected has been recently white-washed all over, the walls of one nest coming in for a share. 13th. Little progress has been made, the weather being still unsettled: one nest has been thrown down. 16th. The martins are rebuilding on the foundation of the injured nest, to which about an inch and a half has been added, and on which they were found crouching and sheltering themselves from the gale in the evening, as if about to roost. Another pair was observed snugly ensconced in a half-finished nest. The foundation of one nest being about four inches from the eaves, I was at a loss to conjecture how it could be made sufficiently roomy, but now find that the walls are being carried out laterally, giving it an odd one-sided look. 17th. The work progressing very slowly, owing to the high wind. 18th. Continued gale and heavy rain throughout the day. 19th. Find that about a third of the walls of the shallow nest has been blown or washed down, and the poor birds are flying to and fro in a wild state of excitement, occasionally settling to examine the breach. 20th. The recently damaged nest has had part of the gap built up; to another nest half an inch or so has been added, though the one adjoining has not been touched, but the nest that is being rebuilt has had a part of the inclined wall raised an inch or more, making it even. The ousted martins have taken repossession of their nest to-day, but being molested by sparrows, it is doubtful whether they will be allowed to finish it. The weather mild and calm at last: thermometer 60° at 9 A.M. The martins are as busy as bees, and almost as numerous: I saw dozens to-day collecting mud from a public road recently watered: the chalky soil was doubtless rendered more tenacious by being trodden under foot and ground down by carriage-wheels. 21st. Thermometer 68° at 1 P.M. The martins have been heard at work throughout the day: the damaged nest has received some further repairs, and most of the others additions, except the one referred to yesterday, which is apparently forsaken. The layers are often inclined and wedge-shaped, so that the walls may be one day sloped, another day even: these layers seldom much exceed an inch in thickness at the broad part; not that this order is invariably observed, as two or more layers are sometimes sloped the same way: why this seemingly awkward mode of building is adopted it is hard to say, but since it admits more sun and wind it dries more quickly. Only one out of the six nests has even the shell completed as yet. A nest having been commenced to-day, I may now ascertain the time taken in building under more favourable circumstances. 22nd. The patch of mud, that yesterday was not readily discernible,

has had a slight lateral extension, and is now about an inch and a half in width by half an inch in depth. Like other late nests it is but about four inches from the eaves. The rebuilt nest is now finished externally, the shell having been completed in nine days, or, allowing two days on account of the old foundation, eleven days; but it is fully a third less in size than usual, and has yet to be lined. A third nest, full-sized, has taken about twenty days in building. 23rd. The new nest is now about two inches wide and an inch deep; both birds have been hard at work, one occasionally turning off the other. A nest was commenced yesterday in front of the house, by a small patch of clay being placed close to another, to which it has now been joined, though the foundation is on a much higher level, so that the nest will be at least a third less in height. 25th. Little work done yesterday, which I think was partly owing to the roads not being watered and the intense heat: thermometer 73° at 1 P. M. I have remarked that after a shower double the work is done. Though rather more progress has been made to-day, but one nest has received any considerable addition, and I observe that one nest has a hole at the bottom. The house sparrows are seemingly in undisputed possession of the old nest, which is quite open at the top. 26th. The nest commenced on the 21st has had some addition, but it dries so quickly under a scorching sun, with the thermometer at 80° in the shade, that it is impossible to say how much. To the new nest in front of the house, begun on the 22nd, a large piece has been added, and it has now a very peculiar appearance, looking like a broken saucer. The reason of its being attached to another nest is now made apparent to the least observant. Instinctive master-builders! they are saving both time and labour by building on to their neighbour's gables: reason and instinct, truly, are nearly allied. 27th. The last mentioned nest has had considerably more than an inch added since yesterday, but then it must be borne in mind that the walls are a third less in extent than usual. The birds go into the nest build, and, on bringing a large quantity of mud, deposit it in two or three different places, smoothing off the inner surface by turning round as on a pivot. 30th. The nest commenced on the 21st has been completed externally, or nearly so, in the ten days, but is very small, and still too open. The shell of the new nest in front of the house is also finished in the rough to-day, being the ninth day, and is now not unlike a pine-apple in shape, with its upper side flattened at the eaves, the lower side somewhat curved and tapering to the opening, which is at the apex of the cone, its base resting on the other nest, so that it has no

bottom of its own. It is difficult to say when a nest is finished, for some of them, though being lined, are quite open at the top, but may be built up, and the opening rounded off, while the eggs are incubated. They have been observed taking sea-weed to line their nests, and they collect mud from off the shore, where a rivulet falls into the sea. Though the hole in the rebuilt nest has been stopped some of the upper part has fallen away, for want of adhesiveness, I believe. There are now eight nests, but two only are of full size and well rounded. I believe, as I have already remarked (Zool. 9840), that Macgillivray was mistaken in thinking that the martin ever completes its nest, even under the most favourable circumstances, in six days, and I have shown that these hastily built or rebuilt nests are not only of smaller size, but imperfect in shape and finish, yet take nine days or more in the construction. Though saying that the construction of the nest occupies from six to ten days, he does not inform us how he arrived at this conclusion, but I think the following passage from a correspondent's communication explains it:—"I have seen them inhabited in the course of six or eight days, particularly when the former ones have been washed down." That the martin usually takes about double the time in building that Macgillivray has here stated there can be little doubt, though much depends on the weather. From twelve to fourteen days I believe to be about the average time for a full-sized nest.

Cuckoo.—A neighbour's gardener, on looking into a robin's nest on the 20th of June, was surprised to find in it a young cuckoo of the size of a thrush, which after being handled (like the young of many other species) would not remain in the nest. An endeavour is being made to bring it up by the hand, and it feeds readily enough; indeed it has a constant craving for food, as might be expected, seeing that its foster parents must be for ever feeding it. The nest was in an abrupt ivy-covered bank, where it would have puzzled any large bird but the cuckoo to have laid an egg, it being quite embedded in the ivy, where there would be no room for a cuckoo, unless seated on the edge of the nest with tail erect, which probably is the position it assumes, though its laying in the nest of the robin must be of rare occurrence.

HENRY HADFIELD.

Ventnor, Isle of Wight,
July 6, 1866.

Honey Buzzard in Suffolk.—A fine female specimen of the honey buzzard (*Falco apivorus*) was shot on the 18th of June, at Mutford, near Lowestoft. Its plumage was good and very prettily mottled on the breast. The ovary contained a cluster of eggs in a forward state of development, varying in size up to as large as the thrush's. Its stomach was filled with the remains of the spotted flycatcher's and thrush's eggs, which I was enabled to identify by discovering fragments of the eggshells intermixed with the contents.—*T. E. Gunn*; 3 West Pottergate, Norwich.

Tawny Owl's Nest on the Ground.—The following are the particulars respecting a tawny owl's (*Strix aluco*) nest found on the ground, in North Wales, June 1, 1866:—The nest was close to the edge of a small wood of pines and beeches at Hafod-y-llyn, Merionethshire, within a stone's throw of the Festiniog Railway on one side, and a public road on the other. It was merely a hollow scraped in the dead beech-leaves on the ground, and sheltered on one side by the steepness of the hill, and on two others by part of an old moss-covered stump, some two feet high. The old bird did not fly off till I was close upon it, and then, by no means scared by the sunlight, made its way at once to a safe distance. The nest contained three eggs, of a pure and glossy white, and of the following measurements:—

- i. Length 1 inch 11 lines, breadth 1 inch $6\frac{1}{2}$ lines.
- ii. " 1 " 11 " " 1 " 6 "
- iii. " 1 " 10 " " 1 " $5\frac{1}{2}$ "

There were no very old or hollow trees in the neighbourhood, which may perhaps account for the nest being on the ground.—*Charles B. Wharton*; Willesden, Middlesex, June 23, 1866.

Occurrence of the Bee-eater in Wiltshire.—A very fine male specimen of the bee-eater was shot, in the afternoon of the 4th of May, in the parish of Bishopstowe, in this county. The bird was observed in an orchard amusing himself the whole day in hawking for insects, and he is reported to have been in the habit of returning to a certain tree, which he had selected as his station, and of knocking his bill smartly against the branch, previously to swallowing the insect he had captured. A mason named Turner, in the employment of Mr. Temple, of Bishopstowe, watched the bird from the top of a cottage where he was repairing the tiles, and being attracted by the beauty of the plumage, sent for a gun, and shot it from the spot where he was working. I am informed that the bird was quite alone.—*Alfred Charles Smith*; Yatesbury Rectory, Calne, June 4, 1866.

Food of the Wood Pigeon.—In reply to your request (S. S. 310), I beg to say that I believe the whortleberry to be the chief food of the wood pigeon at this season (see Zool. 9723), and clover. Besides, ivy-berries and beech-mast have to be added to the winter "bill of fare." I have the authority of an experienced poulterer, through whose hands many dozens pass during the year, in corroboration of my own observations: he says that much charlock-seed is found in their crops, which alone is more than enough to compensate the farmer for the grain consumed.—*Henry Hadfield*; Ventnor, Isle of Wight, June 6, 1866.

The Common Crane in India.—The common crane of Europe visits India in numerous flocks during the cold weather. In the Deccan and Central India it is generally seen in small flocks of four, six or eight, to twenty, now and then in much larger numbers, especially in the Punjaub and the North-Western Provinces. It

feeds chiefly on grain, committing great havoc in the wheat fields, and in rice fields in Bengal, but it also eats shoots of plants and flowers, and occasionally, it is said, insects and reptiles. On one occasion I found that the flowers of *Carthamus tinctorius* had been the only food partaken of; it is stated in China to devour sweet potatoes. It feeds chiefly in the morning, and rests during the day in some river or bank, returning to the fields for a short time in the afternoon. It has a fine loud trumpet-like call, chiefly heard during its flight. It leaves this country early, generally before the end of March, and breeds in Northern Asia and Europe, in marshy ground generally, occasionally, it is said, on the roofs of deserted houses. The eggs are two in number, of a greenish colour, with some brownish spots.—‘*Birds of India*,’ ii. p. 665.

The Demoiselle Crane in India.—This beautiful crane is found throughout the greater part of India, is more rare in the extreme south, is never seen in Malabar, nor in lower Bengal; one writer says that it is never met with below Dinapore. It is a cold weather visitor generally, only coming in late October, and its arrival, like that of the last, is hailed with joy as a sure sign that the cold weather has indeed come. It associates in large flocks, from fifty to five hundred, and chiefly frequents the vicinity of rivers, as it invariably, according to my own experience, betakes itself during the heat of the day to rivers to drink and rest, and never to tanks or jheels, as the Sarus and common crane do. One writer, however, states that he has seen and shot them in a jheel. It is very destructive to grain fields, especially to wheat in Central India, and to chenna (*Cicer arietinum*) in the Deccan. They fly with great regularity, either in a long continuous line, or in a double wedge-shaped line, and then utter their fine clanging note frequently. The demoiselle crane breeds on the ground in Northern Asia, laying two olive-gray eggs speckled with rufous. The male bird watches while the female is incubating, and fights boldly if attacked. They are said to dance among themselves, and will often seize hold of any small article, toss it up in the air and catch it as it descends. It is also stated that they occasionally eat mice, snakes, &c., lifting them up and dashing them down on the ground till quite dead. The Karkarra makes a fine flight with a Bhyri, occasionally two or three miles; it never uses its beak in self-defence, but is very apt to injure the falcon with its sharp inner claw. A well-trained Bhyri therefore always strikes this crane on the back and never on the head. The mate of the stricken quarry often turns and comes to the rescue of its companion. It is shy and difficult to approach when resting, but less so when feeding, and it is well worth a little trouble, as it is one of the best birds in India for the table, and the praises of “roast coolen” are sung by many sportsmen. The name *Kllung*, transformed into Coolen, is wrongly applied to this species by many sporting writers, it being always used for the common crane by falconers and the best shikarees. The name Karkarra appears to be nearly the same word as is used by the Mongols of Central Asia, according to Pallas, viz. Karkarror, and is evidently an imitation of its call. This is common in Northern Africa, and is occasionally killed in the South of Europe.—*Id.* ii. p. 667.

Ornithological Notes from Barnard Castle.—Seeing a notice in the ‘*Zoologist*’ of a pied blackbird changing colour, I thought it might be interesting to you to know that we have had one here with two white wings for the last seven years at least, without any variation: he has only been once seen this spring. I saw a woodcock on the 23rd of May, and from the short distance it flew when flushed (only a few yards), and the way it ran about afterwards, I thought it had a nest, but have been unable to find

it. A specimen of a bird which I suppose to be the hen harrier was seen and shot at several times this spring, on some of the moors in this neighbourhood, and was afterwards found dead, in a state of decomposition: the watchers called it a "glead," but said it had a "ring-tail," and not forked: owing to a fall of snow after hearing of it I was unable to get the remains. I had a pair of merlins and five eggs brought me the other day: there are still one or two pairs about, and as I have not heard of their being killed I hope they have escaped. A few pairs of pied flycatchers build with us every summer, though they are considered uncommon. A bittern was killed here in February, 1865.—*Charles Chipchase; Cotherston, Barnard Castle, June 16, 1866.*

Surmullet, &c., taken at Penzance.—You may note as an interesting fact that some time last week a surmullet was taken in the drift-nets, about fifteen leagues south-west of Scilly, and in about sixty fathoms of water. My informant is the captor, R. Y. Mann, of Mousehole: he said it was of large size, which here would mean that it was a fish of over twelve inches long. You can note also that I took yesterday the "piper" and a specimen of Bloch's gurnard having the dark spot in the dorsal mentioned by Yarrell (first edition): it is the first specimen so marked which I have seen. I have also taken the "braise" or "becker" this month.—*Thomas Cornish; Penzance, June 30, 1866.*

Trifurcated Hake and Smooth Serranus at Penzance.—I have taken the trifurcated hake again this week. Mr. Humphry Davy took, on Wednesday, and handed to me the smooth serranus of Yarrell (the "comber" of Couch). Mr. Couch mentions it as not an uncommon fish, but this is only the second specimen I ever saw in this Bay.—*Id.; July 14, 1866.*

Fresh-water Eels in Salt Water.—Mr. Davy has also just taken several large fresh-water eels in salt water. They were taken yesterday in a draw sean just at the mouth of the Harbour, and upwards of 500 yards from any fresh water.—*Id.*

PS. After writing the above, I mentioned the fact of fresh-water eels having been taken in the sea to my boatman, who knows just as much about fish as I do (he has been with me fifteen years), and he assured me that in the course of last summer he saw fresh-water eels taken in a shrimping-net under low-water mark between the Mount Pier-heads. This is more extraordinary than the fact which I recorded, inasmuch as absolutely no fresh water at all flows into the Mount Harbour, and there is none nearer than the mouth of Marazion River, which is very much fouled by mining operations, is nearly half a mile distant, and is separated from the Mount in the straight line by a deep channel of sea, partly rocky and partly sand in the bottom. At low water there would be a communication by land between the mouth of the river and the back of the Mount Pier, but it would be by a circuit of more than a mile, and it does not appear to be probable that the eels went this way. Besides which if they did they must have afterwards found their quarters in pure salt water endurable.—*Id.; July 23, 1866.*

Smooth-tailed Stickleback in Norfolk.—In dissecting an example of the spoon-bill, recorded in the 'Zoologist' (Zool. 9418), I obtained three specimens of the three-spined stickleback, in perfect condition, from its throat: I also found its stomach to contain several others, but in a state of decomposition. I identified the specimens as the smooth-tailed species (*Gasterosteus leiurus*), mentioned by Yarrell, in his 'History

of British Fishes' (vol. i. p. 81). I forwarded two of the above examples to Dr. J. E. Gray, of the British Museum, who confirmed my impression, but appears to consider that species only one of the many varieties of the common three-spined kind.—*T. E. Gunn*; *Norwich, June, 1866.*

Occurrence of the Allice Shad (Alosa communis) on the Aberdeenshire Coast—A female specimen of the above rather rare fish north about here was taken on the 7th of June, in a net set for salmon, near Pennan Head, on the estate of Auchmidden. It may be of interest to at least some of the readers of the 'Zoologist' to learn that the specimen was exceedingly full of ova or spawn, the grains large, of a reddish yellowish colour, and seemingly ready to be extruded.—*Thomas Edward*; *Banff, July 11, 1866.*

Ray's Bream near Liskeard.—A beautiful specimen of that rare fish, Ray's bream (*Brama Rayii*) was washed on shore here on the 4th instant; it was brought to me before it was quite dead. Mr. Couch, in his 'History of British Fishes,' gives an excellent figure of it, but it is quite impossible to paint the brilliant metallic mirror-like appearance, as seen in the living fish.—*Stephen Clogg*; *Looe, July 16, 1866.*

Spider or Mouse.—In my communication to the 'Zoologist' (S. S. 105), it will be seen that I refrained from commenting on Mr. Birchall's "Note on the Field Mouse" (S. S. 8) as much as I possibly could, but as he has again referred to the same subject in the 'Zoologist' for June (S. S. 284), I beg to offer a few reasons, derived from his communications, why I think it could not be possible for a mouse or mice to be the agents in causing the deposition of moths' wings, as seen by him in the cave at Ilkley. If mice dine at night, when the Noctuxæ are on the wing, could they possibly capture the great number of moths required for such a deposit as described by Mr. Birchall? or if, on the other hand, they dine by day, is it probable they would take the trouble to drag so many hundreds of moths into an open cave merely to eat them there? or could they do so without causing considerable damage to the wings or leaving a trace of their teeth on them? I think all these questions may be safely answered in the negative. Mr. Birchall acquits birds and bats, because he "found no other traces of their presence," and, without saying he found any traces of mice, he jumps to the conclusion that they must be the agents, and thinks those conclusions confirmed because, on setting a trap in the cave, an unfortunate mouse falls a victim to his snare; this, I think, is not evidence against the mouse, as I believe field mice may be caught almost anywhere if a trap is set for that purpose, their abundance and prowling propensities being such that they pry into every nook and corner when seeking their food, which I have always considered to be of a vegetable kind. Mr. Birchall tells us, in his first communication, "In one corner was a spider's web, from which large numbers of wings were suspended, no doubt carried there by gusts of wind," yet in his reply he writes, "very few wings were under the web or near it at all." How can he reconcile the two statements? and surely the gusts of wind which would be likely to raise the wings to the web would scatter the wings "in the corner," as well as those "nearer the entrance, just where a current of air would not deposit them." The reply is so full of contradictions to his first communication that I think Mr. Birchall must have forgotten what he wrote at first, and suits his reply, as he thinks, to his own case,

and with a determination that the mouse shall be the marauder. It appears to me to be a mere quibble to say the spider "was not even seen, much less caught." Nature, no doubt, has given spiders sufficient instinct to know where to place their webs, so as to procure a proper supply of food, which, in this instance, appears to have been most successfully chosen; and no one, I think, would attempt to deny that a web a foot square would be more "competent for the amount of work required by Mr. Clogg," than the mouth of a mouse would be. Had Mr. Birchall taken the trouble to do so, I think he might have both seen and caught the spider. Had the wings been found in the mouse's "den," instead of being scattered over the cave as well as hanging on the web, the evidence would be strong against the mouse; but as the description of the case at first given by Mr. Birchall stands, I think the evidence convicts the spider. Out of consideration of the space they would occupy in the 'Zoologist,' I refrain from noticing any more of the numerous contradictions and improbabilities of Mr. Birchall's note.—*Stephen Clogg; Looe, July 16, 1866.*

Descriptions of Lepidopterous Larvæ. By EDWARD NEWMAN.

MACROGLOSSA BOMBYLIFORMIS.

The egg is laid singly on the leaves of *Scabiosa succisa* (devil's bit scabious), on which plant the larva feeds. The larva, for which I am indebted to Mr. Doubleday, was full-fed on the 20th of July, and rested on its food-plant in a nearly straight position, the anterior extremity scarcely raised, but the legs not clasping its food. Head prone, rounded on the crown, covered with minute warts, each of which emits a short and slender bristle, scarcely narrower than the 2nd segment, into which, however, it is sometimes partially received: 12th segment culminating in a mediodorsal horn, which is directed backwards and very slightly turned upwards at the tip: the segments of the body are divided transversely into sections, each of which is beset with scabrous points; and each point emits a short and fine bristle; the caudal horn is beset in like manner with scabrous points and minute bristles. Colour of the head pale dull green, the scabrous points being white; dorsal area of the body still paler green, the scabrous points being white; there is a narrow mediodorsal stripe slightly darker than the general area, and apparently due to the presence of food in the alimentary canal seen through the skin; on each side half way between the spiracles and this mediodorsal stripe is a double longitudinal stripe commencing on the 3rd segment and terminating in the caudal horn; the upper half of this stripe is pinkish purple, the lower half white; the horn itself being also of a pinkish purple, rather darkest above: the spiracles are reddish

brown with a white spot at each extremity, and each spiracle is situated in an oblique patch of pinkish purple, bordered especially above with whitish green; these oblique markings have a different direction to those of such normal Sphingidæ as constitute the genera *Sphinx*, *Smerinthus*, &c., their dorsal extremities tending forwards as in some of the *Notodontidæ*, a very noteworthy peculiarity, because it breaks down one of the most obvious characters for distinguishing the larvæ of these two families; the anterior spiracle has no such ornamentation; ventral surface, including the claspers and legs, dull pinkish purple.

MACROGLOSSA FUCIFORMIS.

Feeds on the leaves of *Lonicera periclymenum* (common honey-suckle), and is full-grown about the middle of July, when it rests in nearly a straight position, the anterior extremity being very slightly elevated, and the legs crowded together near the mouth. Head prone, narrower than the 2nd segment, into which it is partially received; the crown is rounded and not conspicuously divided: body nearly cylindrical, slightly attenuated anteriorly, the divisions of the segments indistinctly marked, and each segment is transversely divided into sections, which are beset with a series of minute slightly raised warts, giving the surface the appearance of shagreen; the 12th segment is furnished with an acutely-pointed scabrous horn, which is nearly straight, but in a very slight degree bent upwards at the extremity. Colour of the head dull rather glaucous green: dorsal surface of the body glaucous green, with a darker mediodorsal stripe, evidently due to the proximity of the intestinal canal, visible through the skin; lateral area apple-green, the series of minute warts already described being yellow; the spiracles are reddish, with a white dot at each extremity; each spiracle occupies the centre of a roundish purple-brown spot, which is again surrounded by an indistinct yellow ring: the whole of the ventral surface, including the legs and claspers, purple-brown, the division between this and the bright green of the sides being very marked; the caudal horn is of the same purple-brown colour, and rather paler at the tip. I am indebted to Mr. Doubleday for the opportunity of describing this larva, specimens of which I had never previously seen.

HADENA SUASA.

In confinement feeds voraciously on *Polygonum aviculare* (common knot-grass), and is full fed about the third week in July. It eats principally by night, resting by day, in a straight position, on those stems

of its food-plant which are prostrate on the ground ; but, when disturbed, it elevates the anterior part of its body, tucks its head in tightly, and assumes an elegant and most Sphinx-like attitude, even more striking than that of *Sphinx Ligustri*. If the food-plant be shaken it falls to the ground in a tight compact ring. Head narrower than the 2nd segment, into which it is partially received when at rest : body almost uniformly cylindrical, but slightly attenuated at both extremities, the divisions of the segments decidedly but not deeply marked : the surface smooth and velvety, but exhibiting, under a lens, a few minute short hairs. Colour various ; that of the head and body of the same hue ; the prevailing varieties are obscure grass-green and olive-brown, as in so many other of our Noctuidæ ; the head sometimes plain, sometimes reticulated with darker markings : the dorsal always darker than the ventral area of the body, and divided immediately below the spiracles by a bright and very conspicuous stripe, which extends from the head into the anal claspers : this stripe is bright ochreous-yellow, narrowly margined above by dark umber-brown in the browner specimens, by black in the greener ; and margined below by a paler stripe, which in some specimens has a tinge of brickdust red ; the dorsal surface has three indistinct narrow stripes darker than the ground colour, and dividing the dorsal area into four equal parts : these three stripes are scarcely perceptible in the greener specimens, but in some of the browner specimens are very conspicuous, and interrupted at the divisions of the segments, and each of the exterior ones is thus divided into a series of separate markings, each of which is slightly oblique, and together they constitute a tolerably regular series on each side of the back : on each side of each segment, equidistant between the mediodorsal and the interrupted stripe, is a double dot, half black and half white ; and the entire surface is reticulated with smoky black, and dotted with white : the ventral is not only paler than the dorsal area, but is slightly transparent, and, like the dorsal area, is slightly reticulated with darker, and dotted with lighter markings. I am indebted to Mr. Campbell for an abundant supply of the larva of this species, which do not appear to me recognizable by any previously published description.

EDWARD NEWMAN.

Leominster, July 20, 1866.

The Birds of Shakespeare. By J. E. HARTING, F.Z.S.

"THE instruction which may be drawn from Shakespeare is equal to the entertainment which his writings afford. We cannot peruse his works without having our understandings considerably enlarged. To promote, therefore, the knowledge of him is to contribute to general improvement."*

If Shakespeare is worth reading, moreover, he is worth explaining, and without a complete inquiry into his allusions the spirit of his writings can never be fully understood or appreciated. Pennant, in his 'British Zoology,' remarks that it is incumbent on every lover of Science to attempt placing the labours of ancient authors in a just light; to mark those errors that owe their origin to the darkness of the times; and to evince that many of their allusions are strictly true, many founded on truth, while many others contain a mixture of fable and reality which certainly merit the trouble of separation.

It is plain that Shakespeare had much reading at least, if they will not call it learning. Whatever object of Nature or branch of Science he either speaks of or describes, it is always with competent if not exclusive knowledge; his descriptions are still exact; all his metaphors appropriate, and remarkably drawn from the true nature and inherent qualities of each subject.† Indeed, it was the opinion of Dr. Johnson that Shakespeare commonly derived his knowledge of Nature from his own observation, and no one can fail to be delighted with the variety and richness of the images which he has derived from Natural History.

Having, from a mere love of the subject and admiration for the poet, carefully perused his plays, to ascertain what knowledge he possessed respecting birds, our inquiry has resulted in the following notes, which, it is conceived, will be found of sufficient interest to entertain all lovers of birds.

We have extracted every sentence of note in which there is any allusion to birds, explaining where explanation seemed necessary, and occasionally illustrating from other authors. It may with truth be said that there are many passages in Shakespeare's plays which, to one unacquainted with the habits of birds or ignorant of the terms employed in falconry, would be wholly unintelligible, but which, being interpreted, are found to contain the most beautiful and forcible

* Prospectus to Stockdale's edition, 8vo, 1784.

† Pope.

metaphors.* Take, for example, the passage which occurs in 'Othello' (Act iii. Sc. 3), where the Moor compares his suspected wife to a "haggard falcon."†

From the following list it will be seen that no less than forty-three species of birds are mentioned or alluded to by Shakespeare. In some instances the references are very numerous, and although it has been our endeavour as much as possible to connect them, and so make our notes less disjointed, it has been found oftentimes impracticable from their nature to accomplish this.

| | | |
|---------------|------------|-------------|
| Vulture | Finch | Turtle Dove |
| Eagle | Sparrow | Pheasant |
| Osprey | Chough | Partridge |
| Falcon | Raven | Quail |
| Hawk | Crow | Lapwing |
| Kite | Rook | Heron |
| Buzzard | Jackdaw | Woodcock |
| Owl | Magpie | Snipe |
| Thrush | Jay | Goose |
| Blackbird | Wren | Swan |
| Hedge Sparrow | Cuckoo | Duck |
| Robin | Kingfisher | Cormorant |
| Nightingale | Swallow | Gull |
| Wagtail | Martin | |
| Skylark | Pigeon | |

VULTURE (*Vultur fulvus*, Linn.)

Only five allusions to this bird are to be found throughout the plays, and in none of them is the particular species determined.

"Let vultures vile seize on his lungs also!"

Henry IV. Part I. Act v. Scene 4.

"Thus, while the *vulture* of sedition

Feeds in the bosom of such great commanders,

Sleeping neglectation doth betray," &c.

Henry VI. Part I. Act iv. Scene 3.

"There cannot be

That *vulture* in you to devour so many."

Macbeth, Act iv. Scene 3.

* "However much black-letter books may be necessary to elucidate some parts of Shakespeare's works, there are other parts which require some acquaintance with the pages of the Book of Nature." (Pye's Comments, &c., 1807).

† This passage will be found commented upon under the title "Falcon."

“ O Regan, she hath tied
Sharp-tooth'd unkindness like a *vulture* here.”

Lear, Act ii. Scene 4.

“ Let *vultures* gripe thy guts.”

Merry Wives, Act i. Scene 3.

EAGLE (*Falco chrysaëtos*).

“ Were't not all one, an empty *eagle* were set
To guard the chicken from a hungry kite,
As place Duke Humphrey for the King's protector?”

Henry VI. Part II. Act iii. Scene 1.

* * * “ That hateful Duke,
Whose haughty spirit, winged with desire,
Will cost my crown, and, like an empty *eagle*,
Tire on the flesh of me and of my son.”

Id. Part III. Act i. Scene 1.

Tire is a term used in falconry. When a hawk was in training it was frequently necessary to prolong its meal as much as possible, to prevent it from gorging: this was effected by giving it a tough or bony bit to *tire on*, that is, to tear or peck at. Steevens quotes an example of the word used in this sense from Decker's ‘Match Me in London,’ 1631.

* * * “ The *vulture tires*
Upon the eagle's heart.”

And Mr. Collier quotes another from ‘Histriomastix,’ 1610, sig. F. 3.

“ O how this *vulture*, vile ambition,
Tires on the heart of greatnesse and devours.”

So, in ‘Timon of Athens’ (Act iii. Scene 6), one of the lords says,

“ Upon that were my thoughts *tiring* when we encounter'd.”

And in Ben Jonson's ‘Catiline’ (Act iii. Scene 3) we read,

* * * “ And let
His own gaunt eagle fly at him and *tire*.”

The eagle has always been considered the emblem of majesty, and has been variously styled the “king of birds,” “the royal bird,” “the princely eagle,” and “Jove's bird.” The power of vision in this bird is so extraordinary that to have an “eagle eye” has become proverbial.

“ Behold his eye,
As bright as is the *eagle's*, lightens forth
Controlling majesty.”

Richard II. Act iii. Scene 3.

“ Nay, if thou be that princely *eagle's* bird,
Show thy descent by gazing 'gainst the sun.”

Henry VI. Part III. Act ii. Scene 1.

The opinion that the eagle possessed the power of gazing undazzled at the sun is of great antiquity. Pliny relates that it exposes its brood to this test as soon as hatched, to prove if they be genuine or not. Chaucer refers to the belief in the ‘Assembleie of Foules,’—

“ There mighten men the royal *egal* find,
That with his sharp look persith the sonne.”

So also Spenser, in his ‘Hymn of Heavenly Beauty,’—

“ And, like the native brood of *eagle's* kind,
On that bright sun of glory fix their eyes.”

And in ‘Romeo and Juliet’ (Act iii. Scene 5) we read,

“ An *eagle*, madam,
Hath not so green, so quick, so fair an eye,
As Paris hath.”

There is a slight mistake, however, in supposing the eye of the eagle *green*. In the golden eagle the irides are *hazel*, in the spotted eagle also *hazel*, and in the whitetailed eagle *yellow*.

The power of flight in this bird is no less wonderful than that of vision, and eagles have been killed measuring seven and eight feet from tip to tip of wing, and strong enough to carry off hares, lambs, and even young children. Shakespeare was no doubt aware of this when he wrote,

“ This was but as a fly by an *eagle*.”

Antony and Cleopatra, Act ii. Scene 2.

And

“ An *eagle* flight, bold and forth on,
Leaving no track behind.”

Timon of Athens, Act i. Scene 1.

Nevertheless we are reminded that the eagle, notwithstanding his great powers of flight, is not always secure,—

“ And often to our comfort shall we find
The sharded beetle in a safer hold
Than is the full-wing’d eagle.”

Cymbeline, Act iii. Scene 3.

In India, Tartary, China, Persia and other parts of the East, the eagle was formerly, and is still to a certain extent, used for hunting down the larger birds and beasts. (See Sir J. Malcolm’s ‘Sketches of Persia,’ and Johnston’s ‘Sketches of Indian Field Sports.’) We read that in the thirteenth century the Khan of Tartary “kept upwards of two hundred hawks and *eagles*, some of which had been trained to catch wolves; and such was the boldness and power of these birds that none, however large, could escape from their talons.” Burton, in his ‘Anatomy of Melancholy’ (Lond. 1676, fol., Part 2, p. 169), quoting from Sir Anthony Shirley’s ‘Travels,’ says, “The Muscovian Emperours reclaim *eagles* to let fly at hinds, foxes, &c., and such a one was sent for a present to Queen Elizabeth.”

Owing, no doubt, not only to the greater difficulty in training them, but also to the difficulty of obtaining them, eagles are rarely trained to the chase in England. Captain Green, of Buckden, in Huntingdonshire, had a very fine golden eagle which he had taught to take hares and rabbits: and this species has been found to be more tractable than either the spotted or the whitetailed eagle.

Judging from one or two allusions in his plays, Shakespeare appears to have been aware of the eagle’s use in falconry. In the following passage two hawking terms are used in connexion with this bird:—

“ Know the gallant monarch is in arms,
And, like an *eagle* o’er his aiery, *towers*
To *souse* annoyance that comes near his nest.”

King John, Act v. Scene 2.

This passage has been differently rendered, by removing the punctuation between “aiery” and “towers,” and reading the former “airey” or “airy,” and making “towers” a substantive. But I think the meaning of the passage, as it stands above, is sufficiently clear.

“Aiery” is equivalent to “eyrie,” the nesting-place; and the verb “to tower” is a common expression in falconry, signifying “to rise spirally to a height.” Compare the French word “tour.” As a further argument, too, for reading “towers” as a verb and not as a substantive, compare the following passages from the same play and

from 'Macbeth,' which plainly show that Shakespeare was not unacquainted with this word as a hawking term :—

"Ha, majesty ! how high thy glory *towers*."

King John, Act ii. Scene 2.

And

"A falcon *towering* in her pride of place."

Macbeth, Act ii. Scene 4.

The only word, then, which remains to be explained is "souse." This also is a term borrowed from the language of falconry, and is equivalent to "swoop." It would seem to be derived from the German "sausen," which signifies to rush with a whistling sound like the blustering of the wind, and this is certainly expressive of the "whirr" made by the wings of a falcon when swooping on her prey.

There is a good illustration of this passage in Drayton's 'Polyolbion,' Song xx., where a description of hawking at wild-fowl is given. After the falconers have put up the fowl from the sedge, the hawk, in the words of the author, having previously "towered," "gives it a souce."

Beaumont and Fletcher also make use of this word as a hawking phrase in 'The Chances,' iv. 1 ; and it occurs in Spenser's 'Faerie Queene,' Book iv. C. 5, st. 30.

To "souse" is still used in the meaning of plunging and throwing provisions into salt and water, from the Latin "salsum," which sense agrees with the precipitate plunge of a falcon on a water-fowl. (See note to Staunton's Shakespeare, i. 469).

Eagles, like many others of the hawk kind, are very fond of bathing, and it has been found essential to supply them with baths when in confinement, in order to keep them in good health. In Henry IV. (Part I. Act iv. Scene 1) we read,

HOTSPUR. "Where is his son,
The nimble-footed madcap Prince of Wales,
And his comrades ?" &c.

VERNON. "All furnish'd, all in arms,
All plum'd like estridges, that with the wind
Bated, like *eagles* having lately bath'd."

Bate is another hawking term, meaning to *flutter*, and occurs frequently throughout the plays, as will be seen hereafter.

"The world is grown so bad
That wrens make prey where *eagles* dare not perch."
Richard III. Act i. Scene 3.

"More pity that the *eagle* should be *mew'd*."

While kites and buzzards prey at liberty."

Richard III. Act i. Scene 1.

The word "mew," derived from the old French word "mué," signifies a change, or the period when birds and other animals moult, or cast their feathers, hair or horns: hence Latham observes that the "*Mew is that place, whether it be abroad or in the house, where you set down your hawk during the time she raiseth (or reproduces) her feathers.*"

It was necessary to take great care of a hawk in her mewing time, and in 'The Gentleman's Academie' (London, 1595, edited by Gervase Markham) there are several sections on the mewing of hawks, from one of which it may be learned that the best time to commence is in the beginning of Lent, and, if well kept, the bird will be mewed (that is, moulted) by the beginning of August. The verb "to mew," or "enmew," subsequently possessed the secondary meaning, as in the last quotation, of "to enclose," "shut up," or "confine." Thus, also,

* * "To-night she's *mew'd* up."

Romeo and Juliet, Act iii. Scene 4.

* * "Forth comming from her darksome *mew*."

Faerie Queene, Book I. Canto v. 20.

And

"Captiv'd eternally in yron *mewes*."

Id. Book II. Canto v. 27.

The Royal hawks were kept at the mews at Charing Cross during many reigns (according to Stowe from the time of Richard II. in 1377), but they were removed by Henry VIII., who converted the place into stables. The name, however, confirmed by the usage of so long a period, remained to the building, although after the hawks were withdrawn it became inapplicable. But, what is more curious still, in more modern times, when the people of London began to build ranges of stabling at the back of their streets and houses, they christened those places "mews," after the old stabling at Charing Cross.

The eagle has always been considered so far superior to all other birds as to merit the title of king of birds. We find many comparisons illustrating this throughout the plays.

In the first act of 'Troilus and Cressida' (Scene 2), when the forces are passing in review, so soon as the generals have passed, Pandarus, who with Cressida, is looking on, says,

“Ne’er look, ne’er look, the *eagles* are gone;
Crows and daws, crows and daws!”

And in ‘*Coriolanus*’ (Act iii. Scene 1),

* * “Which will in time break ope
The locks o’ the senate, and bring in the crows
To peck the *eagles*.”

“Dismayed not this our captains?
Yes, as sparrows, *eagles*.”

Macbeth, Act i. Scene 2.

The conscious superiority of the eagle is thus depicted:—

“The *eagle* suffers little birds to sing,
And is not careful what they mean thereby,
Knowing that with the shadow of his wing
He can at pleasure stint their melody.”

Titus Andronicus, Act iv. Scene 4.

“Thou art like the harpy,
Which to betray doth wear an angel’s face,
Seize with an *eagle’s* talons.”

Pericles, Act iv. Scene 4.

The word *harpy* appears to be derived from the Latin “*harpago*,” to grapple or plunder; or perhaps from the Greek *ἄρπη*, a hook or sickle.

The mention of the word “talons” recalls to mind the boast of Sir John Falstaff,

“When I was about thy years, Hal,
I was not an *eagle’s* talon in the waist.”

Henry IV. Part i. Act ii. Scene 4.

How he altered in appearance as he grew older we all well know.

“Drones suck not *eagle’s* blood, but rob bee-hives.”

Henry VI. Part II. Act iv. Scene 1.

J. E. HARTING.

Kingsbury, Middlesex.

(To be continued.)

Letters on Ornithology. By HARRY BLAKE-KNOX, Esq.

LETTER II.—BRITISH LARIDÆ.

Subfamily XEMA. Species LARUS RIDIBUNDUS and L. CAPISTRATUS.

A Natural History of the Brownhooded or Blackheaded Gull, with an Account of all its Plumages and Transformations from the Nestling to the Adult Bird; also some Questions about the Masked Gull.

Habits.—The brownhooded gull, the only bird of its family that can be said to be indigenous to Ireland, or in fact to the British Islands, (as I believe neither the masked gull nor any other of the dark headed gulls have been found breeding in the United Kingdom), is both a marine and an inland bird. Throughout the autumn and winter it is very common on our eastern coast, and being gregarious is seldom met with alone. From the middle of March it grows scarce on the sea, both the adult and young birds retiring inland, the former for the purpose of conserving their species, the latter prompted by a latent instinct to visit those haunts of their parents at this season, so that in after years they themselves may not be strangers to them; however, be this as it may, both young and old leave the sea from the middle of March, returning again with the young birds of the year in July. As this bird positively does not breed till three years old, as I will hereafter show, I can form no other opinion but that an impulse of Nature causes them to leave the sea, or that the young do so in imitation of the adults, and that at a time too when the sand eels are most abundant in the Bay. Sometimes, however, flocks visit their old winter feeding-grounds during summer, and these flocks, though to the uninitiated looking like adults, are composed of two-year old birds, or the unmistakable young of last year. Thompson has also seen these seemingly adult birds in flocks during summer far from any breeding-station, and strangely considered them “barren” birds, as we also read of the kittiwake at this age being considered barren, notwithstanding the immature aspect of the genital organs and the bastard wing still marked with black at two years old, in both kittiwake and blackheaded gulls, whereas the spurious wing of the kittiwake in the adult is pure blue, in the blackheaded gull pure white. “From the River Lagan,” says that true naturalist Thompson, “they used to be

wholly absent from the period of their retirement, late in the spring, until old and young returned in company. I was therefore surprised to see a flock of forty-nine fly high above the Lagan Bridge early in the evening of the 15th of May, 1850, all adult birds, and followed by two or three smaller flocks proceeding seaward, in the same course, most probably to their breeding-haunt. Many adults, I was told, were daily observed in the Bay from this time forward. On the 4th of June I remarked a number of old birds in a similar place in Lancashire—the marine strands about Fleetwood; and on the 2nd of July about forty in that state of plumage appeared in a flock, at a locality of the same nature, between Drogheda and Dublin. Their wandering far from breeding-haunts, in the midst of the season, would therefore seem to be not unusual, unless that such birds—like adult kittiwakes, hereafter to be mentioned—do not increase their species.” Yarrell supposed that the bird of a year old, figured in his plate, was breeding, because shot at the breeding-grounds, yet a moment’s dissection would have proved the contrary. Montagu believes it mature at a year old, and tells us that it loses the bar on the wing and on the tail in its first spring, which it never does till the summer or early autumn moult: he gives no dates, and his plumages are incorrect. Macgillivray is quite accurate in his plumages, but traces them no further than the second autumn. The blackheaded gull is a most graceful bird on the wing, the pale blue back and snowy breast looking intensely sparkling if viewed against a lowering sky, and many a dim picture of wintry storm has the buoyant tern-like flight of this gull gladdened, as I sat on some lonely coast cowering from the searching sleet among some of Nature’s ruggedest cliffs, with the mighty Atlantic thundering at my feet, where the only sound of *living* life was the wild hoarse laugh of the wagel (young herring gull), as he soared by, seemingly wondering how a man could love the solitude that to him was home. Unlike the true gulls the brownhood seems to revel in the storm, and never is its flight more varied than at these times: flapping gently along at one moment, the next with snowy under parts thrown up to the storm, it will permit itself to be carried fifty yards or more, sideways, from its direct flight, and will again assume the old position, flapping gently not a foot above the boiling sea; hid at one time between two waves, to be seen the next to alight upon the summit of a billow, pick up some scrap, and be left *still* flying as the wave tosses its white crest from under its still white breast. It seems as happy and as much at home as if the day had August for its mother, and a

bright sea tempted it lazily to lie in clusters upon its glittering surface, picking the old feathers from its breast to give place to those for the coming hard winter. It seems as happy as if it and the kittiwake were united together, as of old, in genial autumn, to wage war upon the luckless herring fry, when with shriller cry and more active dart, it used to take its prey from the very bill of its three-toed brother; and he himself, poor fellow! how those crow-like thieves, the skuas, would force to disgorge, with angry wail, after vain and fruitless efforts at escape, a part of his last hard-earned meal. In the most stormy easterly weather this gull keeps to the sea, unlike the true gulls, which always in easterly gales soar over and along the rocks of this iron-bound coast. We pass through a large city (Dublin), and from its busy quays we see the brownhooded gull, in its pearly winter plumage, in the very heart of that city, sailing and gliding about its polluted river, without any fear of the listless idlers that gaze upon its varied flights, and wonder how its bright red legs and pure breast can touch without contamination that monstrous cesspool—that disgrace to civilization—the River Liffey. We see it taking long things in its mouth, and scarce dare think what they are, yet their white and knotted bodies put the name into our mouths: they are tapes, and bloated grubs and other beastly food; but still it looks as pure as if the bright green brine was dancing still beneath its wings. We find ourselves upon a desert strand,—a wild black oozy slob,—its muddy stones are overgrown with dark and sickly weeds and green slime; beyond, stretch those miles of gray sand, appearing as if smoking, for the wind is carrying their light particles along in clouds. The air is impregnated with the smell of iodine, so sweet to the wild-fowl shooter, and many cries come to his ears—the sounds of Nature, the song of birds, making him still more lonely, still more at home. Loud above others sounds the curlew's *lonely* whistle, and next the blackheaded gull's varied cries and screams, "kree kree," "krek," "kree-e-e-e," "kree-a-kree," "shek-ak-shek-ak," "sil lee-e-e,"—apt music for the place and scene. Yes, here the bird that seeks the city's heart walks his domain, leaving the impress of his little scarlet foot on the shaking ooze, as with lordly step and nodding head he seeks Crustaceans, Astereæ and marine insects, and worms in the mud; but here he shuns you: he is ever wary when man *seeks* him either on sea or land. The farmer follows his plough with trudging step, laying bare the secret haunts of worms and other vermin: behind him and on either side follow the little blackheaded gull and his more noble brother, the common gull,

and occasionally the herring gull—fearless, silent, taking no heed of the clamorous rooks, but all unitedly doing man a service, and preying on the scourges of his crops. More than one has felt a love for Nature, as they saw these beautiful birds, made more beautiful by the contrast with the dark brown earth; and many a farmer's boy has wondered what like the sea could be. Many of this species permanently frequent our large lakes, and you will rarely pass Conn or Corrib without seeing gulls. These birds must exclusively live on fresh-water fish and insects, and those grubs, &c., derived from the neighbouring fields. Suppose yourself in the far West of Ireland, black peat bog on every side, what land is cultivated is blacker still than the bog or its pools of dark water, black stacks of peat and a blacker sky. This dreary aspect occasionally relieved by some mud hovel, with tottering walls and withered thatch kept on by heavy stones, its thin column of blue smoke ascending and impregnating the air with the *monotonous* aroma of burning peat; or perchance some wiry sheep are striving to graze on a tawny slope, for though it is May there is no growth yet; one stunted tree by the cabin possessed by two magpies and their nest (for what Connaught cabin is without its magpie's nest!) There is nothing green, nothing bright but the magpies. Stop! there is, though, something to vie with the *burnished* magpie. Can you not see his dark brown head from this—his blue back and the snowy margin to his wing? Is he not more beautiful than when you saw him last in Dublin Bay, as he gladdens that bleak prospect and your heart, sea naturalist? Why does he seek a land like this, in preference to the sparkling waters of the sea? Because this is "home," and let it "be ever so humble, there's no place like home." There is the low flat lake, where a colony of these birds breed; that little undulating swell of land had hid it from our sight, and from its shores—grown with reeds and bulrushes, all withered now, their lanky stems reflected in the dull dark water—rise a company of these birds. I wonder could there be a wilder scene! Heigh ho!

Food.—The blackheaded gull (as are most of the gulls) is omnivorous. I have taken fish, grain, bread, candle-grease, pieces of oily cotton thrown from steamers, meat, vegetables, insects (particularly moths, dragonflies and water Coleoptera), worms, crustaceans, mollusks, Radiata, &c., from their throats. Of their feeding on and taking the ghost moth at night on the wing, as stated by Thompson, I have had ocular proof, and in addition to his statements I may remark that the

wings are cleverly bit off and discarded, the gull never alighting. This habit links them closely to the marsh terns. "As a difference of opinion exists," says Thompson, "about certain species of birds eating slugs, or shell-less snails, on the 10th of August, 1833, I tried four young blackheaded gulls with different species of them; the small yellowish one (*Limax agrestis*), the young of the speckled (*L. maximus*), and the small blackish one with orange belly (*Arion hortensis*). These were offered to the gulls after their usual daily time of being fed was past, and when they were extremely vociferous for food. On the slugs being presented they all four dashed open-billed upon them, and picked up a slug each, which was no sooner done than they one and all flung them violently away with evident disgust: some of them returned a second time to the charge, and again picked up a slug, but this was as rapidly expelled as at first."

Flight, Swimming, Resting.—The flight, as I stated before, is very like that of some of the terns, with a strong blending of that of the gull: it is extremely lasting and very buoyant; the direct sailings, however, are unlike the true gulls, being short, though the power of turning and twisting without beating the wings is surprising, a bird often appearing as if mortally wounded, by throwing itself from side to side, and if accustomed to be fired at will do so while you are presenting the gun: these eccentric flights may be seen without any assignable cause. When taking their food from the water the legs dangle in it, and the piece is seized in the tip of the bill. Their most graceful evolutions in taking food are called forth should it be a rapid stream, one bird vieing with another for a scrap. Should the piece be too large to swallow, it will alight on the water and shake it into shape. The flight of a colony of these birds when disturbed from their nests is truly marvellous, and so intricate are the windings that it is past description, for to follow one bird would be impossible. Strange aerial flights, too, I have seen before bad weather in winter, and have watched birds till totally lost to view, so high have they ascended. They swim like the other gulls with a jerking motion, the breast deepest, the tail elevated and the head gracefully curved or crouched. In rising they make no seeming effort, except opening the wings. They seldom, when on sea, alight anywhere but in the water. When inland they alight freely, and I have even seen them standing on a railing, but the feet not closed. When standing, the head is generally carried crouched.

Cry.—The cry is very various, and as I have endeavoured to word

some of its commonest sounds before, I shall not write it again, only adding that I think "ridibundus" equally a misnomer as "blackhead." "Scolding" would be more appropriate than "laughing," considering it the only British gull that does not "laugh," and whose notes sound always pettish and irritable.

Nidification.—The nest is built in a tuft of rushes standing isolated in the water, among the herbage at the bank and on the ground. It is composed of withered substances, those collected in the vicinity, and flat. The eggs range to four; I have seen five, and Thompson mentions six. Very various in size, colour and markings. The ground colour is pale brown, dark brown or green-brown; spotted or blotched or streaked with brown, black, gray and purple. It is folly to think to discern the allied species of this family by the size of the egg, as they are often several degrees smaller than the type. I have seen eggs called masked gulls' that I could procure a basketfull of any year, they being to my eye, and perhaps it is rather critical, only small blackheaded gulls'. I never met with this gull breeding anywhere but by fresh water. There are so many capital accounts of breeding-stations of this bird already in print that I will not trouble to describe one, but refer again to the Belfast naturalist, and no ornithologist should be without Thompson's 'Natural History of Ireland.' Nidification begins in May; the young are out from the end of that month throughout June. On account of the robbery of eggs, we suffer a little annoyance in tracing the plumages of the gulls, moults being sometimes a month or six weeks late on this account, and examples rather dwindled. In my descriptions of plumage I shall therefore always use the early bird, so that readers must not accuse me of ignorance if I state the moults a little earlier or perhaps later than their experience.

Plumages.—No. 1. *Young in Down.* Down long, very soft; wood-brown or pale brown above, spotted black; pale beneath, the sides spotted dusky; on the throat a dark patch; under eyes a white patch. Bill and feet olive.

No. 2. Link 1. Mixture of down and first plumage.

No. 3. *First Plumage or First Summer.*—July. *Upper surface:*—Head, top of head and nape from gape under the eyes to the ear-spot brown, clearly indicating the future hood; the forehead and a circle round the eyes whitish. The neck is white, except at its junction with the body, where it is banded by a deep band of dull brown, with fainter edges, not encroaching on the breast, but running down and forming

an angle before the wings. The back, shoulders and scapulars deep brown, the edges wood-brown or tawny. Rump and tail-coverts white. Tail white, deeply banded at end with black-brown; tips pale; first feather pure white, seldom with dark at the end. Upper coverts of secondaries deep brown, with pale tips; the lower coverts of secondaries chiefly blue-gray; some are marked with brown. *Under surface*:—Yellowish white. Bill gray, flesh at base, dark tip. Feet earthy flesh. (In collection.)

No. 4. Link 2. *First Autumn Moults*.—Begins in August, and is complete in September or October. Some of the back and scapular feathers change by transmutation, the greater part by moult. In this stage the back, shoulders and scapulars are mixed with new blue-gray feathers, and the head with white; the band at base of neck is also falling off. (In collection.)

No. 5. *First Winter*. November. *Upper surface*:—Head and neck white, concealed parts of head-feathers gray or brownish; ear-spot and that before eye black. Back, shoulders and scapulars pale blue-gray. Rump and tail-coverts white; tail unchanged. Margin of wing white, and primary coverts and bastard wing white, marked with black and gray. Upper coverts of secondaries the same as in No. 3, but worn very pale at the edges, the centres still deep brown; tertials and some of the secondaries brown, with the edges pale; these form the brown band from the carpal joint across the wing to the tertials; the lower secondary coverts generally as the back. *Under surface* pure white. Feet dull flesh-colour. Bill flesh-colour at base, dark tip. The primary quills vary more or less; they are never tipped with a white spot. *Type of the Primary Quills*.—No. 1. Shaft white, except a quarter of an inch at end brown, both filaments for half an inch at tip brown; greater filament white, well bordered with black all its length; lesser filaments all black, except along the shaft a narrow line of white widening towards tip. No. 2. Top of shaft and filaments brown, deeper in extent than in No. 1; dark bordering of greater filament much wider; the white edge to shaft of lesser filament is much wider and usurps the whole of filaments towards base of quill. No. 3. A deeper brown tip and a still deeper band to greater filament; the white usurps more of the lesser filament. No. 4. The same, a greater usurpation. Nos. 5 and 6. The white usurps much of lesser filament and grows blue, brown nearly occupying all greater filament. No. 7. In the lesser filament the white has turned blue, only bordered for a very short distance with dark, all greater filament

brown. Rest are generally blue; the 8th with a black tip. (In collection.)

No. 6. The above plumage continues till February, when the base of the bill and the feet turn an earthy red colour.

No. 7. Link 3. *First Spring*.—March. Head in moult only. The hood sprouts through the white feathers; the bill and feet turn a dull carmine-red; the band through the wing is rather broken and faded. (In collection.)

No. 8 A. *Second Summer*.—May. The dark brown hood is assumed; it is not so deep down the throat as in the adult. Feet arterial blood-red; bill, the same, except at tip murky. Bar through wing and the rest of plumage as in first winter.

No. 8 B. August. Hood faded to mouse-colour. Bill and feet bright carmine. Band through wing still, but very broken, and with many new blue feathers through it. Rest of the plumage a worn addition of first winter. (In collection.)

No. 9. Link 4. *Second Autumn Moulting*.—Begins often in July, though generally August. The whole plumage, quills and tail are renewed by moult, duration of which varies. The brown hood is sometimes lost first, nearly assimilating the bird to that of first winter. Feet and bill sufficient diagnosis. When the moult is complete the bird is in—

No. 10 A. *Second Winter*.—November. Same as the adult in winter, hereafter to be described, but the feet and bill are *pale scarlet or sealing-wax colour*, and the latter always black at tip. Bastard wing, and some of primary coverts generally, *strongly marked with black and gray*, invariably *shaded with gray*. (In collection.)

No. 10 B. February. Legs and bill scarlet and carmine.

No. 11. Link 5. *Second Spring*.—March. Assumes the hood by moult. Feet and bill a deeper colour.

No. 12 A. *Third Summer*.—May. As the adult in summer. The only difference that the bastard wing and sometimes some of the primary coverts are *marked with black and gray, often very faded*. (In collection.) The testicles of the male not larger than those of the breeding blackbird, one nearly invariably lead-colour: the ova, though not necessarily uniform, are deficient in development and veins; by the microscope no loss can be detected. Testicles of the adult frequently one inch long, developed, cream-colour, veinous. In the female the ripe ova contain the yolk, or eggs have been detached. In June the examinations are more conclusive as regards the female; the

male has often lost all trace of having bred. The examination of the bones also is a good test for youth. This is generally the "barren" blackheaded gull of authors.

No. 13. Link 6. *Third Autumn*.—Moult is general. Birds frequently met with with the hood mixed with white. Bill and legs carmine. This moult generally begins in August and September, though it is often protracted.

No. 14. *Third Winter*.—As the adult in winter.

No. 15. *Adult in Winter*.—From a bird in November. Head, neck, rump and tail-coverts, tail, bastard wing and end primary coverts pure white, as are all the under parts and the margin of the wing; the spot before eye and the ear-spot black. Back, shoulders, scapulars and wing-coverts pale blue-gray. Feet and bill deep scarlet-carmine. Eye-lids reddish; irides hazel. *Type of the Adult Primary Quills*.—No. 1. Tip, including shaft and filaments for half-an-inch, black; rest of shaft white; lesser filament from the black tip for two inches pure white; rest consists equally of black and white, the black outwards; greater filament from the black tip for one inch all white; rest white edged with black, the edge growing deeper towards the pen. No. 2. Entire tip for half-an-inch black; shaft white, except at tip; all the lesser filament but tip white; greater filament same as No. 1, but edged with black throughout. No. 3. Tip deeper; greater filament as in No. 2; black edge larger; lesser filament white for two inches after the black tip, edged with white; shaft but at tip white. No. 4. The same; at point a white spot; the black edge not so extensive to the lesser filament; the white of greater filament bluish lead-colour. Nos. 5 and 6. Closely similar; the rest are lead-colour, with a dark fringe. No. 7 has sometimes two black spots at tip. As these quills remain on a year till the next autumnal moult, the edges and tips are liable to variation from wear. (In collection.)

No. 16. Link 7. March. The hood assumed by moult, though in old birds I have known this change by transmutation.

No. 17 A. *Adult in Summer*.—May. As in winter, but with a dark soot-brown hood. The feet and bill arterial blood-red. Eyes encircled with white. The under parts often pale or very rich rose-colour.

No. 17 B. Hood faded and mouse-colour by July. (In collection.)

No. 18. Autumnal moult begins in August or September; duration varies. The new white feathers turn the hood into strange shapes.

Barren Gulls.—I cannot conclude without some remarks on this subject, as it is an important one. Taking the gull *naturally*, I cannot think it lives to be barren; taking it as *man has left it*, I can quite believe it to become barren, and that long before its natural term of life, and for these reasons: according to Nature the gulls have but one brood in the year; to satisfy man they are often forced to lay two, if not three, broods: this is sufficient to exhaust the propagating agents, though not of necessity the health; so that gulls may live to be barren. There may be two kinds of barrenness, temporary and chronic. It is generally admitted that the gull will have only three broods of eggs in a season (and only one if not molested): supposing three broods of eggs deposited and taken before the end of June, then for that year it is barren: this is temporary barrenness. Chronic barrenness would be when the power of propagating had ceased, either from excess of age or from a frequent, undue and unnatural tax on the virile organs. I also believe that most of the sea-fowl are polygamous or indiscriminate, or, in other words, the males think that *tuum* is *meum*. Particularly in gregarious sea-fowl I have witnessed this, and have seen females not refusing three lovers, following. I hope you will not say as a friend did, laughing, "'Pon my soul! you are a *nice observer*."

Masked Gull.—Before making any observations on this bird I should like it to be understood that I do not emphatically deny the existence of a gull distinct from *L. ridibundus*, with a mask instead of a hood, but that I do consider it doubtful, and particularly many of the so-called masked gulls shot and seen in British waters. Before giving my experience of *masked* gulls I shall put the following questions, which I earnestly hope, and I am sure every reader of the 'Zoologist' will join in the wish, some *experienced* person will answer, and set all controversy at rest:—

- 1st. Where is the habitat of the masked gull?
- 2nd. Has a gull ever been found breeding with a mask instead of a hood? If so where and when, and by whom found?
- 3rd. Locality of nest, character and description of the eggs *proved* to be those of *L. capistratus*?
- 4th. Does the only difference in plumage lie in a mask instead of a hood, and the colour of the bill and feet?

What I can learn of this bird is that it has no known habitat, but is rare wherever it occurs; that it has never authentically been found breeding; that eggs said to be of the masked gull are only smaller than those of the blackheaded gull, a very feeble ground of distinction, as the egg of the blackheaded gull is often smaller than that of the so-called "masked" gull: that the great distinction lies in the size, *L. capistratus* being smaller than *L. ridibundus*; in the colour of the feet and bill, which in the former are dull red, in the latter arterial blood-red in summer; in the brown of the head assuming a masked appearance in *L. capistratus*, a hooded in *L. ridibundus*: the real brown of *L. capistratus* often takes the place of the sooty brown of *L. ridibundus*, so is consequently not a distinction. In respect of size, I can only say that I have shot many blackheaded gulls in the winter dress identical with the masked gull in this respect, and as there is no known difference in winter but this I might call these masked gulls; but then, unfortunately, the same thing occurs in summer when the hood is to the full; so that size is no distinction. With regard to the colour of the feet, I can also say that the blackheaded gull in spring (particularly at two years old) has the feet and bill the colour of *L. capistratus*, caused by the transmuting of the dull scarlet of winter to the arterial blood-red of summer; in autumn *vice versâ*. With regard to the mask I have shot blackheaded gulls in autumn (the time, too, when masked gulls are generally shot) with the masked appearance of *L. capistratus*: this I always found was caused by the autumn moult, the back of the head turning white before the front. In spring birds transmuting often assume the *mask* before the *hood*. In fact, I have seen gulls in spring and autumn with the back of the head black and the front white, one side of the head brown the other white, the forehead and round the eyes brown, making a perfectly spectacled gull; and, lastly, the hood consisting of brown and white feathers. Last autumn I could have recorded two perfectly masked gulls, but on blowing up the feathers I saw the white ones sprouting, and at *the nape*, in one, was one *brown* feather still. On this subject I have worked hard and killed many poor blackheaded gulls, and also used the telescope freely, and have come to the conclusion, with Thompson, that *our* so-called "masked" are only blackheaded gulls, and I fear many of those in collections would not bear a critical examination. I have seen some admirable "get ups" with dealers; blackheaded gulls that were in strong moult about the nape, with the few remaining brown feathers pulled out, thus leaving the mask. Many acids also

will reduce brown feathers to white, and if carefully used the sooty brown of *L. ridibundus* to that of *L. capistratus*. It is strange, too, how *easily* some dealers get the eggs of this gull.

HARRY BLAKE-KNOX.

Dalkey, Co. Dublin, May, 1866.

NOTICES OF NEW BOOKS.

'A Dictionary of British Birds,' reprinted from Montagu's 'Ornithological Dictionary,' and incorporating the additional Species described by Selby, Yarrell in all three editions, and in Natural History Journals. Compiled and Edited by EDWARD NEWMAN, F.L.S., F.Z.S., &c., &c. 400 pp. demy 8vo. Price Twelve Shillings.

Nothing in the art of criticism is considered more legitimate than for an author to review his own productions; but in the notices which appear from time to time in the 'Zoologist,' there is an obvious departure from rule in my candid admission that each is written by myself: the orthodox way being to seduce the reader into the belief that he is perusing the lucubrations of some perfectly independent and most competent judge of the performance under consideration. The temptation to this line of conduct in my individual instance, is greatly diminished by the firm conviction that any little playful deception of this kind would be most readily detected, and that the detector would proclaim his discovery far and wide. Instead, therefore, of affecting mystery in the matter, I shall content myself with stating that the Dictionary has been a labour of years, that it has cost me a great deal of time and money, and that every ornithologist who purchases a copy will do me a favour for which I shall feel grateful.

To give an analysis of a dictionary, with or without commendation is clearly impossible: but it is a comparatively easy task to reprint the Preface, which is a kind of promissory note; and then to select one or two examples of the performance. Should the influence of these extracts prove favourable I am clearly entitled to the benefit; if unfavourable I must abide the consequences.

Editor's Preface.—"To Colonel Montagu's admirable Introduction I have not a sentence to add as regards the natural history of British

birds: nevertheless it seems desirable to give some account, however brief, of my editorial stewardship. In the first place, I desire explicitly to state that I have taken nothing from the text of the original work; and in the second place, I have added scarcely anything of my own: in no instance have I overlaid the original with my own observations, altered the author's obvious meaning to suit my own views, or attempted to controvert his assertions because at variance with my own more limited experience: nevertheless important additions have been made, which I will endeavour to explain.

“1st. Observation and discovery are incessantly at work; and these daily add to our store of knowledge: it is no more probable that Science will remain stationary than that this earth will discontinue its rotation: both events are possible, but so improbable that they may not enter into our calculations: hence the voluminous additions made by Colonel Montagu to his original labours; between 1802, the date of the Dictionary, and 1813, the date of the Supplement, he collected new materials more than equal in bulk to the original work: these are now incorporated. In 1833, twenty years subsequent to Montagu's Supplement, Mr. Selby produced his ‘Illustrations of British Ornithology,’ and in this admirable work he added twenty-four species to those previously recorded as inhabitants of Britain. Mr. Yarrell published the first edition of his ‘History of British Birds’ in 1843; a second edition appeared in 1846, and a third and final edition in 1856. In these three editions no less than fifty-nine additions were made to the number of species described by Selby, and eighty-three to those described by Montagu. The ‘Zoologist’ has added twenty-one species, and the ‘Ibis’ two species, not included in either of our systematic works. It must, however, be stated, in fairness to those gentlemen whose researches have contributed so largely to the enormous addition of one hundred and six species since the time of Montagu, that the records and descriptions of many of these appeared first in the ‘Zoologist,’ and were transferred from thence to the admirable work of Mr. Yarrell; but I most willingly give that work the credit of all these additions, on account of its systematic character. From these several sources are derived the whole of my editorial additions, as regards number of species.

“2nd. Immediately following the English name of each bird, is a reference to a figure in the third edition of Yarrell's ‘History;’ that work is not selected on account of the accuracy of the figure, which is generally commendable, but because of the completeness and high

character of the work itself: Bewick's figures are referred to by Montagu, and of these representations it is impossible to speak too highly: many of the birds he has depicted I have never seen living, and therefore can pronounce no opinion as to the truthfulness of their positions, but a large proportion of the birds figured by Bewick are familiar to all, and the figures are more like instantaneous photographs of living creatures than the result of pencil-work in an artist's studio. They are almost miraculous, and show how forcibly the form and action of each bird must have impressed itself on the draughtsman's memory. Of the letterpress of the work which bears Bewick's name the truest kindness to that honoured memory will be shown by passing it over in silence.

"3rd. Following the reference to Yarrell's figure of the bird, is one to Hewitson's figure of the egg: the accuracy of these figures, carefully drawn and exquisitely coloured, leaves nothing to be desired. The third edition of the 'Oology' is cited in every instance.

"4th. In the descriptions of the rarer species, I have quoted from the 'Zoologist' additional instances of their occurrence: many similar records occur in the 'Field' newspaper, but are not cited when the communications are anonymous.

"All these additions are distinguished from Colonel Montagu's text by editorial brackets, and in every instance the source whence they have been derived is carefully indicated.

"Notwithstanding the pains I have taken to collect and incorporate these various records, I am bound in fairness to state that I regard a great number of the species now added, as well as of those described by Montagu, as not having the slightest claim to the title of British birds. I confess this seems something like building a house of cards and blowing it down again. My duty, however, seems to me very plain. Like my great predecessor, I have collected and arranged these records; and, like him, I express the opinion that in a purely scientific point of view they are utterly worthless. The time seems to have arrived when the conscientious compiler must eliminate all these interlopers.

"I believe the utmost injury has resulted to Science in this country from the desire to multiply the number of our species: naturalists have sought to effect this in more ways than one; in many instances the differential characters of age, sex and season have been urged on our attention; but in still more, the productions of other countries have been recorded as our own. The dealer holds himself excused in this;

but with the NATURALIST, properly so called, truth is the paramount object of search; and he regards with repugnance, I may almost say abhorrence, every attempt at imposition.

“In cases where additional synonymes or authorities occur in the Supplement, they have been incorporated with the others; but any additional species or remarks are retained under the respective heads of Supplement and Appendix.

“With these brief observations, which I trust will at any rate receive the candid consideration of some of my readers, I commit my book to their care, comforting myself with the reflection that the desire to be useful has been the prompting cause of my laborious but agreeable undertaking.”

EXAMPLES OF THE BOOK.

[*Flycatcher, Redbreasted*.—*Muscicapa parva*, *Bechst. Naturg. Deut.* v. 3, p. 442; *Temminck, Manual d'Ornithologie*, vol. i. p. 159; *Gould, Birds of Europe*, plate xii.—“The adult male has all the upper parts of an uniform shade of cinereous-red, which assumes a slightly blue tint above the ears; the wing-feathers are cinereous-brown; the four middle feathers of the tail, and the tips of the side feathers of the tail, are blackish; these last are pure white at their base; throat, fore part of the neck, and breast bright red; flanks reddish; the remainder of the under parts white: bristles at the base of the beak very long; beak and legs brown. Length 4 inches 5 lines. The adult female has the red of the breast and neck much duller, and all the other colours less distinct. At present I am only well acquainted with the young of this species. They are of a very bright red on the breast and flanks; the throat white, slightly tinged with red; all the upper parts ash-coloured; the wing-feathers margined and tipped with red; the side feathers of the tail white, tipped with cinereous-brown: in this state it is the *Muscicapa parva* of Bechstein, *Naturg. Deut.* v. iii. p. 442; *Kleiner fliegenfauger*, Meyer, *Tasschenb. Deut.* v. i. p. 215. *Note*.—This species, for which I am indebted to my friends in Germany, is there migratory, but very difficult to procure. I have not heard that the species has been seen elsewhere; probably it only passes through France in its migrations. I am unable to say whether it has a double moult, but I suppose so. It inhabits the vast forests of Germany only during the very short breeding season: it is common in the eastern parts of Germany towards the south: it feeds on small insects. It builds on the united

branches of two neighbouring trees, or in a fork of the branches.”—*Temminck*, i. 158. “The moult of this species is single, but the colours of the plumage, especially of the under parts, change periodically, from the same cause as those of *Muscicapa grisola* and *M. albicollis*. *Muscicapa parva* and *rufogularis* of Brehm, Vog. Deut. p. 227. Atlas du Manuel, pl. lithog., the male in spring. Naum. Naturg. Neue Ausg. pl. 65, fig. 3, the young bird of the year. Inhabits the neighbourhood of Vienna, but it is not common: it is more abundant in Hungary. It has just the appearance of the Redbreast, which it resembles in the tints of its plumage; it also possesses the warbling song of that bird.”—*Temminck*, iii. 85. We are indebted to Mr. Gould for making known to us the addition of this interesting little bird to the avi-fauna of Britain; all that is known respecting it is recorded by Mr. E. H. Rodd in the ‘Zoologist;’ the first notice is in the volume for 1863, at p. 8444:—“The following communication, which I received from Mr. Gould, enables me to add the above interesting and (to Western Europe) rare species to our Cornish list of birds:—‘Strange to say, on the very day I visited Falmouth one of the rarest of European birds was shot for the first time in Great Britain, and, it being killed in Cornwall, I thought you would like to know something about it. The bird in question is the *Muscicapa parva*, and you will find figures of it in Part 14 of my ‘Birds of Europe,’ which you have in the Penzance Museum. The plates will at once give you an idea of this pretty species (a robin amongst the flycatchers). I certainly never expected this singular bird to have been added to our Fauna. This occasional lateral migration of birds is very singular: the proper home of the species is Western India or the eastern parts of Europe. The specimen was sent in the flesh to Dr. Gray, of the British Museum, and in this state I had it in my hands, so that there is no mistake about it. The bird was in good condition, thanks to your genial climate. The bird was shot on the 24th of January, by Mr. Copeland, of Carwythenack House, in the parish of Constantine, near Falmouth, and is a female. Unfortunately the specimen was placed in some insecure place, and the head was eaten by mice or rats, so that the body alone was sent to the Museum. If you write to Mr. Copeland, ask him to look out for the male, which will have a red breast.’ I wrote at once to Mr. Copeland, whose attention to Natural History, and whose especial interest in observing the ornithological rarities in our county, I felt sure would ensure an accurate account of the capture of this little wanderer; and I received

from him the following interesting remarks on the habits of this bird:—‘Your favour has duly reached me. The little Flycatcher alluded to we observed some days before it was shot. Its habits were interesting, taking a great deal the character of our summer visitor. We first observed it on a dead holly tree; this tree and the ground around the house were its favourite resort. It was particularly active, skimming the grass to within about a foot, then perching itself, darted occasionally with a toss, resting either on a shrub or the wire fencing. There is another in the neighbourhood, for which a vigilant watch will be kept. I saw it a few days back in a plantation which is four hundred yards from my house. Should I be fortunate to capture it, you shall have due notice. I believe that with due attention many interesting visitors may be found.’ I am unable to offer you any particulars of this valuable fact, except second-hand; but no doubt, upon the two authorities I have quoted, you will feel a pleasure in giving the visit of this new British bird a place in the ‘Zoologist.’” The second and only other notice is at p. 8841 of the same volume:—“Amongst the various arrivals of different birds, in their migratorial movement at this season of the year at Scilly, Flycatchers were observed on Friday last, three of which were captured, one of them from its smaller size being taken for a Chiffchaff. The four outer semi-white tail-feathers arrested the attention of my nephew and Mr. A. Pechell, who were the captors, and they were sent over here for my inspection. The little bird, from the description my nephew gave before I saw it, led me to believe it would prove a second specimen of the *Muscicapa parva*. He writes:—‘Pechell has sent three little birds to be preserved, and we want your opinion about them. Two, we think, are young Pied Flycatchers; the third seems to be something like a Chiffchaff, but the tail is not right, and the white feathers seem odd. I think they are all young. The actions of the bird with the white tail were those of a Flycatcher.’ On examining this third and small bird, it proved to be the Redbreasted Flycatcher. The sides of the breast are tinged with buff-brown, which colour is perceptible across the breast. The chin and middle parts of the breast and belly white, not quite pure. The four outer tail-feathers with their basal halves irregularly white, leaving the tips to the extent of two-thirds of an inch brown. I venture an opinion that this is an immature male bird.” There can be little doubt, now that attention has been called to this little bird, and its similarity to the Robin, both in song and plumage, pointed out, that

we shall have numerous other records of its occurrence in the British Isles.]

[*Grouse, Sand*.—*Syrnhaptes*.—A genus of birds, of which the characters are: Beak short, rather slender; first primary of each wing, and two middle feathers of the tail, terminating in a long, slender, naked shaft: legs densely covered to the nails with short feathers; hind toe wanting, the remaining toes somewhat dilated, united throughout their length, and forming a flat scabrous sole: nails broad and flat, scarcely bent.]

[*Grouse, Sand, Pallas*'.—*Ibis*, ii. 4. *Syrnhaptes paradoxus*, *Illiger*. *Tetrao paradoxus*, *Pallas*, *Itin.* ii. *App.* p. 111, tab. F.; *Zoograph. Rosso-Asiat.* ii. p. 74.—MALE: Beak (stuffed bird) dark horn-colour. Forehead, and space between the beak and eye and over each eye, orange-yellow, continued backward down the sides of the neck in a richer tint, and divided by a streak of stone-colour from the bright patch of reddish orange pervading the chin, and throat in front. Breast rich stone-colour, inclining to pink, bordered with four darker pencilled lines, from the point of each wing, when closed, across the chest, the dark lines crossing each feather near the tip, but edged with stone-colour. Breast below these lines, and flanks, much more pink, with a dark broad abdominal band, showing some pinkish feathers, crossing the stomach in front of and between the legs. Vent and under tail-coverts white. Feet and legs buffy white, feathered to the claws. Ground colour of back and wings rich buff, each feather banded with black and tipped with buff. Scapulars more unevenly marked. Point of wings with a few dark blotches, but the wing-coverts rich buff, tinged with a slight shading like a fine water-marking. Across the secondaries a rich chestnut bar. Primaries greyish blue; shafts black; first primary shaft elongated. Tail-feathers barred like the back, except two centre ones, blue in tint and elongated. (Autumn plumage). FEMALE: Upper part of head black. Wings and all upper parts streaked, spotted and barred with blackish brown on a buffy ground, giving a mottled look, like a Kestrel. Over the head, extending to back of each eye, a streak of lemon-yellow, similar to the gular patch, which terminates in a dark ring, not observable in the male at any time; the lemon very bright. Breast, all the wing stone-colour, not so pink as in male. Broad band across the abdomen like the male, but more reddish in some. Feet and legs same as in male. Tail-feathers slightly elongated. Vent white. Primaries greyish. Secondary bar reddish chesnut. (Female, July). This bird is a native of Asia,

more especially of the Chinese Empire. Mr. Swinhoe informs us it is very abundant, during winter, on the plains between Peking and Tientsin, flocks of hundreds constantly passing over with a swift flight, not unlike that of the Golden Plover, for which bird they were at first mistaken. "The market at Tientsin," says Mr. Swinhoe, "was completely glutted with them, and you could purchase them for a mere nothing. The natives call them Sha-chee, or Sand-fowl, and told me they were mostly caught with clap-nets. After a fall of snow the capture was the greatest, for where the net was laid the ground was cleared and strewed with small green beans. The cleared patch was almost sure to catch the eye of the passing flocks, who would descend and crowd into the snare. It only remained then for the fowler, hidden at a distance, to jerk the strings, and in his hawl he would not unfrequently take the whole flock." Mr. Swinhoe was told that these birds are found abundantly in the great plains of Tartary beyond the Great Wall, where they breed in the sand. The same accomplished ornithologist says they possess rather a melodious chuckle, the only note he has heard them utter. The advent in Britain of this species is the most remarkable ornithological fact that has occurred for very many years. The bird was previously unknown to the European Avifauna; for although the name was twice introduced into our list, it was also twice struck out, under the conviction that the bird intended was a species of *Pterocles* long known to ornithologists as an inhabitant of the South of Europe. The first record of this bird's occurrence in Britain will be found in the 'Zoologist' for 1859, at p. 6728, where Mr. Moore, of Liverpool, records that a single specimen was killed near Tremadoc, in Wales, on the 9th of July of that year; two others were seen, but escaped. About the same day a specimen was killed on the opposite side of the Island, at Walpole St. Peter's, in Norfolk; this was an adult male, in perfect plumage (see Zool. 6764). On the 23rd of the same month one of these birds was killed on the Continent, at Hobro, in Jutland, and another seen a few miles from the same locality, as recorded by Mr. Newton (Zool. 6780). An interval of three years passed over before the bird was again observed, and then it made an invasion in force. Great pains have been taken by naturalists in every part of the kingdom to transfer to the 'Zoologist' a record of every instance in which the bird was obtained or seen; but many of these records remain incomplete, owing to the carelessness and indifference of writers, who are not themselves naturalists, in wording their communications, and in failing to give that precise information

which the naturalist regards as of primary importance. In the first place, it may be observed that three out of every four communications sent to the public papers had neither the names nor addresses of the writers; an equal number had no dates of the occurrences; and again, almost the only clew afforded to the sex of the visitors is from the bird-stuffers evidently mistaking males for females, and recording them accordingly: those few instances in which the specimens were pronounced females, on account of the presence of two large and equally developed eggs, were certainly adult males, exhibiting indications usual at the breeding season; a few others, which fortunately fell into the hands of naturalists, were as certainly females, clusters of minute undeveloped eggs being detected in their ovaries. Mr. Henry Stevenson, of Norwich, a most accomplished ornithologist, has taken the greatest pains to elicit the truth from a mass of conflicting and confused evidence on this subject, and has published the result in two invaluable papers in the 'Zoologist,' pp. 8826 and 8849, but his researches have extended only to the counties of Norfolk and Suffolk, and therefore scarcely form a sufficient basis for a general record. In these admirable papers Mr. Stevenson fixes the number killed in Norfolk at fifty-five, and in Suffolk at thirteen; of these, thirty-five were females, which shows that the sexes were about equal in number. It will be seen from Mr. Swinhoe's remarks, already quoted, that in its native country this is a migratory species; and we find that the direction of flight, as the breeding season approaches, was westward from China towards Chinese Tartary. It may also be gathered, from various observations made on the Continent of Europe during the summer of 1863, that its progress continued in the same direction; and further inferred, from the various detached remarks of observers in England, that this great migratory movement was still continued in the same direction, and therefore was not in accordance with the simple law which governs the great vernal and autumnal movement, the direction of which is from south to north in the spring, from north to south in the autumn. A vast majority of migratory birds are insect-feeders, and when the supply of insect-food fails, as it invariably does at the approach of winter, they remove to southern climes where winter has no existence; but here was a migratory movement of a very decided character, in which the ordinary migratory impulse seems to have been entirely absent. The arrival on British land seems to have commenced about the third week in May, and to have continued uninterrupted until the third week in June, when it ceased entirely, for we cannot but

conclude that the examples of this bird subsequently found had arrived during the month included between these dates; during this period at least two hundred and fifty, and probably three hundred, were destroyed. This view of the direction taken during this abnormal migration is certainly supported by the evidence of Mr. Gatke, who, writing from Heligoland, says (Zool. 8724), "This very beautiful and interesting stranger was first observed and shot here on the 21st of May, the weather being very fine with a moderate easterly breeze. Each successive day up to the earlier part of June, it was seen here in flocks from about three, five or fifteen, to fifty, and in one or two instances even to a hundred. Out of these nearly thirty have been shot; the earlier birds being, with two exceptions, all very fine male specimens; the later nearly all female birds; every one of them in the most perfect plumage. After a lapse of a fortnight, *viz.*, on the 22nd of June, six sand grouse again made their appearance; out of these five were shot, all female birds, whose plumage no longer had the fresh and tidy appearance of the earlier instances; so that all through this abnormal and mysterious excursion of the species they still adhered to the rules of birds on a regular spring migration; that is, the males forming the van, the finest old specimens come first, after which the females make their appearance, the rear being invariably made up by weak, badly developed or injured individuals of a shabby appearance. I was so fortunate as to obtain two living specimens of this sand grouse, a male and a female, both of which for a while went on very well; but yesterday, to my great regret, I discovered that the female had died. The abdomen of this bird had the appearance as if containing a developed egg, which on examination, however, proved to be a solid accumulation of a gritty calcareous substance, of the size of a large walnut. It would be very interesting if these birds were to breed on the English moors. Although I have little doubt that, if at convenient localities they are left undisturbed, such will be the result, it also is my opinion that in the autumn the offspring, together with the parent birds, will depart for their original fatherland, never to return. But a future different result would perhaps be obtained if such young birds were to be procured before fully fledged, kept well during the winter, and set at liberty the following spring near such localities as their parents had chosen for their nidification. If during this season any young sand grouse are reared in England or on the Continent, I am sure one or other of them will turn up on Heligoland." It thus seems quite certain that the arrival of these birds in

Heligoland was as nearly as possible simultaneous with their arrival in England, a circumstance by no means remarkable when we recollect that ornithologists have calculated the rate at which birds can fly at the rate of forty, fifty and even sixty miles an hour, and therefore that only a few hours of continuous flight would be necessary to accomplish the distance between the continent of Europe and any part of the British Islands. No hypothesis can be more plausible than that the very birds which rested on the ocean islet of Heligoland made their appearance, on the days immediately following, on the coast of Essex, Norfolk, Suffolk and Lincolnshire. It is not, however, to be overlooked that the bird arrived almost simultaneously at very distant and very opposite parts of the kingdom; thus, commencing at Heligoland, on the 21st of May, we find them on the 22nd of May on Walney Island, off the west coast of Lancashire (Zool. 8687); on the 23rd, in Norfolk (Zool. 8718); on the 26th, at Aldershot (Zool. 8683); on the 27th, at Forest Gate, in Essex (Zool. 8684); on the 28th at Thorpe, in Suffolk (Zool. 8685); on the 29th, in Essex (Zool. 8684). Touching the food of the sand grouse while in England, we have evidence that no imperfection of observation can mystify, and no future observations can possibly confute: this evidence is derived from a careful examination of the contents of the stomach by botanists in all respects competent to pronounce an opinion: the seeds have also been sown, and the result has in every case verified the previous conclusion. Nothing but seeds and very minute stones has been discovered. The seeds belong to seven natural orders of plants; amongst the Cruciferae, *Capsella bursapastoris*, *Brassica napus*, *Sinapis arvensis*, and *Raphanus Raphanistrum*; amongst the Caryophyllaceae, *Sagina apetala* and *S. procumbens*, *Stellaria holosteuum* and *S. media*; amongst the Leguminosae, *Ulex europaeus*, *Genista anglica* and *G. tinctoria*, *Cytisus scoparius*, *Ononis spinosus*, *Medicago minima*, *Trifolium repens*, *T. pratense* and *T. suffocatum*, and *Lotus corniculatus*; amongst the Plantaginaceae, *Plantago major* and *P. coronopus*; amongst the Chenopodiaceae, *Chenopodium olidum*, *C. Bonus-Henricus* and *C. album*, and several others doubtfully ascertained; amongst the Polygonaceae, *Polygonum aviculare*, *P. fagopyrum*, *P. convolvulus* and *P. persicaria*, *Rumex palustris*, *R. acetosa* and *R. acetosella*; amongst the Gramineae, *Poa annua*. It will be observed that all these seeds are of small size, and consequently the numerical supply required to fill the stomach is very large indeed.]

[*Tern, Swift*.—*Ruppell*, pl. 13: *Baron R. K. von Warthausen*,

Ibis, 1860. *Sterna velox*, *Ruppell, Atlas*, pl. 13: *Thompson, Annals of Natural History* for September, 1847, xx. 170; *id. Natural Hist. of Ireland*, iii. 266; *Schlegel, Revue Crit. des Ois. d'Europe*, p. 115; *Degland, Ornith. Europ.* p. 335. ? *Sterna cristata*, *Swainson, Birds of Western Africa*, p. 247, pl. 30.—“Wings and longest tail-feathers about of equal length; outer or longest tail-feathers exceed the middle by three inches. Bill wholly yellowish horn-colour; legs and toes wholly black. Colour of the entire plumage the same as that of the Common Tern (*Sterna Hirundo*), but the back is of rather a darker shade than that of the latter when adult. The black on the head does not reach within one-third of an inch of the bill; space between the termination of the black plumage and the bill pure white.”—*Thompson*, l. c. A specimen of this bird was shot by Mr. Lynch, of Cork Street, Dublin, near Sutton, a place between Dublin and Howth, at the end of December, 1846: two others of the same species were seen: full details are given in the ‘Annals of Natural History,’ in the ‘Zoologist’ for 1847, at p. 1878, and in Thompson’s ‘Natural History of Ireland,’ as cited above. It is known as an inhabitant of the Red Sea, Eastern and Western Africa, and the Mediterranean as far west as Sicily. “Found breeding on the low treeless sand island off the Luabo mouth of the Zambesi, in the month of January. The nests, which were placed a few yards from the tide-mark, consisted of slight hollows in the sand, with a few sticks gathered round. They were quite open and exposed, or placed occasionally under shelter of any log of wood cast up, but never in the centre of the island. This place is well protected from visits of monkeys by a wide extent of water.”—*Dr. J. Kirk on the Birds of the Zambesi Region, Ibis*, 1864, p. 337. The following particulars of its eggs leave nothing to be desired:—“I have fourteen eggs in a good state of preservation, and five injured ones, collected on the Island of Lobo (Archipelago of Dahalak), 1st. Aug. 1857. They are distinguished from all the eggs of *Sterna* hitherto known by their considerable size, and beautiful and very varied colouration. Their length reaches 25—29, their breadth $17\frac{1}{2}$ — $18\frac{1}{2}$, lines; their weight amounts to 57—70, generally to 60, grains. The ground colour is greenish white, greenish grey, reddish white, incarnate or violet-rose. The greenish specimens have, as in *Alca torda*, large blackish brown burnt spots and grey clouds; the reddish ones mostly smaller, rounded, sometimes also burnt spots, the colour changing from the centre to the margin, as stated above, and frequently short and numerous flourishes

of a chesnut-brown (rarely entirely black or light brown), nearly red colour. In several specimens the flourishes are as large and as well-developed as in the finest eggs of *Uria troile*. Bluish grey markings lie deeper in the substance of the shell, and sometimes little conspicuous in the whitish specimens. They generally correspond to the external spots in size, form and situation, and appear rarely as larger clouds in dotted eggs. One specimen is uniform greenish white. Reddish eggs held against a light are transparent yellowish green, greenish ones bluish green. The granulation is strong, coarse, longitudinal, with rounded pores and deep pits."—*Baron R. K. von Warthausen, on the Nidification of certain Birds in North-Eastern Africa, Ibis, 1860, pp. 127, 128.*]

It may be observed that these three species are not noticed in any systematic work on the Birds of Great Britain.

I have only to add that I most earnestly solicit additions and corrections, which will be published from time to time when sufficient to occupy sixteen pages, printed uniformly with the body of the work. These sheets of supplementary matter will be given to the subscribers to the 'Zoologist.'

EDWARD NEWMAN.

Notes on the Mammalia of Norfolk (continued from S. S. 152).—

Weasel.—I have just added two varieties of this species to my collection, which I am informed were obtained in this county several years since. The first is of a pale yellowish brown, and the second an entire pure white: this latter is, I believe, a great rarity; at all events, this is the only instance I have heard or seen of its occurrence.

Otter.—Notwithstanding the mild weather we experienced during the past season, this species appeared rather abundant. Several instances of its occurrence passed within my notice, which I will now mention. A female killed near the River Waveney, in the parish of Gillingham, near Beccles, in January. In the early part of February two very young examples were obtained. A most splendid old male, weighing 27 lbs., accidentally trapped himself in a bow-net, set for the purpose of catching pike, in a dyke adjoining Ormesby Broad, near Great Yarmouth, attracted thither, of course, by its finny prey. I particularly noticed the chin, lips and throat of this specimen, which were perfectly white, the usual hue of those parts being of a dirty white or grayish brown, according to age. In March two examples, male and female, were received from the neighbourhood of our Broads, the former of which was an extremely fine otter, weighing just 30 lbs. In April a female was killed on Surlingham Broad: two young ones were also obtained from the same locality; a half-grown female killed at Burton Turf. Respecting my previous remarks on this species feeding on vegetable substances

(Zool. 9644), I beg to refer your correspondent Mr. Alston to a notice of this habit in the Second Series of the Rev. J. G. Wood's 'Natural History' (vol. i. p. 382), in which the author observes, "That when hard pressed they will have recourse to vegetable substances." I have had an opportunity of examining the stomach of one of the specimens above mentioned, which passed through my hands, but could not detect the slightest indication of vegetable matter, the season being so mild as to enable it to obtain an abundance of its more proper sustenance.

Common Rat.—Three or four piebald varieties have occurred during the course of the past season.

Common Hare.—A fine male specimen of the gray variety of the common hare was killed on the estate of Mr. J. Overman, at Burnham Sutton, near Wells, during the middle of January last. An example or two of this variety occur nearly every season in that neighbourhood (see Zool. 9646). I am informed that two other examples of this variety were also obtained about the same time as the above, one in the vicinity of Cromer and the other near Scole. An individual was killed at Stalham on the 5th of March; it was peculiarly marked by having a large patch of white on its forehead, extending from the tip of its nose to the base of its ears; the remaining hue of its coat as usual.

Common Rabbit.—In November, 1865, two varieties were obtained at Burlingham, near Norwich; the first of a pure white, with the exception of the usual reddish chestnut patch behind its ears, which, however, was much paler than in ordinary specimens. The other was of a uniform pale buff colour.

Red Deer.—A piebald example, an adult male, was killed on the Stanfield estate, near Wymondham, in the early part of October, 1865: its head was cut off and forwarded to this city for preservation.—*T. E. Gunn*; 3, *West Pottergate, Norwich, July, 1866.*

Remarkable Ball found in Ireland.—Some time since a ball was found on the surface of the ground in a grass-field near our house: it is about an inch and a half in diameter: the colour shades from light gray or slate-colour to dark gray or olive: the surface of the ball is uneven, and so hard that scratching on it with the point of a knife makes very little impression: the weight is light (little more than half an ounce); on one side is a small hole, and on inserting a pin you can perceive that the ball is hollow and has a number of cow's hairs inside it; the opposite side of the hole is slightly indented. Perhaps some of your readers could inform me what the material is of which this ball is composed.—*F. H. Battersby*; *Cromlyn, Rathowen, August 18, 1866.*

[I have examined the ball with great care, Mrs. Battersby having had the kindness to transmit it for my inspection; and the only suggestion I can make is that it has been formed in the stomach of a cow or calf from the aggregation of hairs licked off by the animal, and rejected from its stomach in the present remarkable form: I can add nothing to Mrs. Battersby's admirable description.—*Edward Newman.*]

Rats or Mice sucking Eggs.—In the number of the 'Zoologist' for August (S. S. 336) Mr. Jeffery makes mention of the fact of birds' eggs being found minus their contents, and having a small perforation in the shell. Two instances of the same have come under my notice, amongst others, as regards hen's eggs. Some years ago I saw, in the collection of Mr. Smellie Watson, Edinburgh, two common hen's eggs, each having two small and very regular-sided perforations in the shell, *one at each end*, and

and the arguments ran high and became hot. They at length agreed to refer it to me, and both parties approached, vociferously advancing their theories; one half persisting that the young hippopotamus had been bullied by his father, and the other adhering to the mother as the cause. I, being referee, suggested perhaps it was his uncle. 'Wahilluki sahe!' 'By Allah it is true!' Both parties were satisfied with the suggestion."—*'Albert N'yanza,' by S. W. Baker* (vol. i. p. 66). Some readers may perhaps smile at these imaginative and speculating disputants, and wonder what arguments could be used in favour of either the paternal or maternal hypothesis, seeing that there was an entire absence of knowledge of all antecedent facts; the avuncular hypothesis so humourously introduced has certainly no less claim to consideration, even though it may have no more. Are we not now in exactly the same position as regards the spider hypothesis and the mouse hypothesis? is there not in this case also an entire absence of the knowledge of all antecedent facts? Let me suggest a third hypothesis, which has certainly as much claim to consideration as either of the others. Being lately at Leominster, my brother informed me of a collection of moths' wings he had observed in the lower compartment of a building in his garden which was always kept closed at night, with the exception of an aperture over the door, about fifteen inches square: I immediately examined the spot, and found on a landing or flat at the top of some steps leading to the upper story a great number of the wings of the under-mentioned Lepidoptera,—*Chelonia caja*, *Triphæna pronuba*, *T. orbona*, *Xylophasia polyodon*, *Cucullia umbratica*, *Plusia Iota*, *P. Gamma*, *Apamea oculea* and *Acronycta Psi*: about the middle of this landing the wings were absolutely crowded together, and intermixed with a very considerable quantity of the excrements of a bat: there were other wings on every one of the steps, and a greater number suspended in the cobwebs, which occurred here and there in all parts of the apartment. It may be added that a long-eared bat (*Plecotus auritus*) was seen, night after night, careering round the building, and also hawking for *Noctuæ* that frequented the full-blown flowers in the immediate neighbourhood. Immediately after the investigation the landing and steps were cleared of the wings and excrement, and on a visit to the spot the next morning (it was half a mile distant from my brother's residence) I found a fresh deposit of wings, twenty-eight in number, good evidence that seven more moths had been brought to the block, and a fresh deposit of excrement exactly of the same kind as before. Now I might possibly settle the spider or mouse question by suggesting that an uncle of the moths had committed the murders in question, but with so similar a case before my eyes, I cannot escape the conviction that the graphically described scene in the cave at Ilkley was caused by a bat.—*Edward Newman; Leominster, August 4, 1866.*

P.S. August 20, 1866. When this was written I had not the most remote conception that Mr. Doubleday was taking up the subject, and would gladly withdraw this note, but that I had a leading partner in the investigation, who will have cause for dissatisfaction should I exclude the ray of light which has been thrown on the subject by our joint researches.—*E. N.*

Spider or Mouse.—I have just read Mr. Clogg's criticism (S. S. 349) on Mr. Birchall's "Note on the Field Mouse" (S. S. 8), and believe that both he and Mr. Birchall are mistaken in supposing that either mice or spiders destroyed the moths, the wings of which were found in such numbers in a cave at Ilkley. I am convinced that the real culprits were bats. When my friend Robert Dix lived at

Stanford Rivers Hall there was a small circular grotto in the garden, at the end of a narrow path closely shaded by trees and shrubs. Seats were fixed round this little grotto close to the walls. When at Stanford Rivers some years since, Miss Dix wished me to look at the wings of moths which were lying on the seats in immense numbers: they consisted of numerous species, including *Triphæna pronuba*, *T. fimbria*, *T. orbona* and *T. janthina*, *Xylophasia polyodon*, *Amphipyra pyramidea*, *Agrotis suffusa*, &c. I am convinced that these wings were those of moths carried there by bats, probably the long-eared species, which differed much in its habits from the other British bats. Miss Dix is now here on a visit, and she says she has repeatedly seen the bats flying in and out of this grotto, and has no doubt whatever that they carried the moths there and clipped off their wings before eating the bodies. Mr. English once found twenty-four pairs of wings of *Geometra papilionaria* lying on the ground in one of the rides of Ongar Park Woods: no one surely will believe that these moths were destroyed by mice or spiders. When salallows grow over a pond the water is often strewn, when they are in bloom, with the wings of *Tæniocampa gothica*, *T. instabilis*, *T. stabilis* and other early species, and I am certain that this destruction is caused by bats. Wasps will bite off the wings of insects which they have captured, but I never saw a spider do anything of the kind with moths caught in its web, which I think would not hold some of the species, the wings of which were lying in the grotto at Stanford Rivers; and I do not believe that the moths were carried there by mice, as it would be almost impossible for them to capture some of the species, the wings of which were lying about in great numbers on the seats in the grotto.—*Henry Doubleday; Epping, August 6, 1866.*

Curious Scene at Sea.—On Friday last I was the eye-witness of a very extraordinary scene. We were sailing in a smooth summer sea, with a light wind, about a mile and a half S.S.W. of Carn Boscawen, between this place and the Logan Rock, in about thirty fathoms of water, when suddenly, within thirty fathoms of our port-bow, two very large fish rose perpendicular to the water, belly to belly, in close embrace, until nothing but the actual tail portions of their bodies remained immersed, and immediately fell back one on the other, causing a tremendous swirl as they sank. A second or two afterwards, and before the agitation of the water had disappeared, a fish, probably one of those we had seen, leaped out of the water through the swirl at an angle of forty-five degrees, to a height which left its tail clear by a few feet of the water, and of course immediately fell in again. Immediately afterwards my boat passed through the commotion in the waters caused by these proceedings, and we saw just astern the high and acutely-angled dorsals of two fish, apparently in company, rising from two to three feet above the surface of the water. About thirty fathoms south of these two fins, a similar fin was visible. We went on our way, and soon lost sight of them. The two fish rose from the water, and the single fish afterwards jumped, as I have mentioned, close to us, so close that I could distinguish the eye and the position of the mouth of the jumping fish, as well as, of course, its colour, but the whole affair was momentary. Judging by comparison with the spars of my boat, our punt and other things at hand, the fish that jumped must have been close upon, if not more than twenty feet long, and in depth it was about as 1 in 5 to its length. Its head was very large; its mouth was situated well down in the lower part of the head, its eye was easily to be seen, and its colour was dark lead-blue over the back, and flake-white in the belly. So far as memory has served me in my researches since, the fish came

nearest in appearance to the representation and descriptions at hand of the *Globicephalus deductor* (called by Cuvier *Delphinus globiceps*). The whole affair was pronounced by an old pilot who was with me to be the bottle-nosed porpoise "gendering" (i.e. in the act of copulation—"engendering"), and he said he had before seen the same sort of thing. To me the sight was a novel one, and the plunge of the big fish into the air so close to me was worth going many miles to see, albeit our "ancient mariner" comforted us with the assurance that the fish were roguish at such times, and that if this one caught us a blow with his tail we should infallibly be stove. —*Thomas Cornish; Penzance, July 23, 1866.*

Variety of the Blackbird.—I have just got a female blackbird with a number of white feathers in it, but only one white wing-feather. This bird has bred and moulted twice near here: it is not so white as it was before moulting the first time, but the proprietor of the place not being to be trusted for leniency, I have had to bide my time till I could quietly bag it for my collection.—*William Liversedge; 35, Stansfield Row, Burley, Leeds, July 31, 1866.*

Food of the Wood Pigeon.—Allow me to add two dishes to the wood pigeon's bill of fare you give (S. S. 310), viz. dock-seeds and beech-mast. The first I have found to be a frequent article of food, some birds I have examined having their crops distended with it alone; and I believe you will not open many pigeons in the autumn without finding some of the latter. My own idea is that wood pigeons do not consume much grain, but that they punish the crops of peas and beans severely for a few weeks in autumn.—*James Shorto, jun.; High East Street, Dorchester, July 27, 1860.*

Alpine Swift and Buffbreasted Sandpiper in Ireland.—When at Belfast, last May, Mr. Sheals, the birdstuffer, showed me a specimen of the alpine swift (*Cypselus alpinus*), which had been picked up dead by a fisherman near Lough Neagh. He also produced a well-mounted example of the buffbreasted sandpiper (*Tringa rufescens*), which had been shot (with another too much shattered for preserving) in the People's Park, near Belfast. I naturally wished to obtain these specimens, but it seems they are the property of a Mr. Joyce, who prizes them highly.—*Howard Saunders.*

Stone Curlew near Dorchester.—I had sent me yesterday a fine specimen of the stone curlew (*Ædicnemus crepitans*), which was shot about four miles from here whilst feeding with some wood pigeons. On dissection it turned out a young male bird. These birds are now very rare in this neighbourhood, and neither the man who killed it or the farmer on whose land it was shot could tell me what it was. The stomach was stuffed full of the wing-cases of two or three kinds of beetles.—*James Shorto, jun.*

Eggs of Baillon's Crake at Great Yarmouth.—On the 9th of June a friend of mine in this town was fortunate enough to obtain in the market four eggs of Baillon's crake, and on Saturday last another of my friends was so lucky as to get five eggs of the same species. Now as the above were obtained from nearly the same spot, it is reasonable to infer that they were laid by one and the same bird. I have looked over your excellent little work, 'Birdsnesting,' for a description of the nest, but I can find no mention of either bird, nest or eggs. Now my object in writing to you is simply to ascertain whether the nest is of any value or otherwise.—*John Overend; Great Yarmouth; July 9, 1866.*

[By a reference to my 'Dictionary,' it will be found that Baillon's crake has been previously known to breed in the eastern counties: I did not describe the nest in my 'Birdsnesting,' never having seen a verified egg, and having certain doubts about published descriptions. Mr. Overend would much oblige me by writing for the 'Zoologist' a minute description of the egg.—*Edward Newman.*]

Pisa Gibbsii and Sun-fish at Penzance.—I took a female specimen of *Pisa Gibbsii* on the 14th of June: it was from about six fathoms of water, and overgrown with corallines and little sponges, and was the home of many little shells. I also, on Thursday last, inspected a sun-fish of the common sort, which had been taken the day before basking on the surface of the water. There was nothing to remark to you about it, except perhaps its mouth. It was almost laughable to see a great square fish, weighing nearly a hundred weight and a half, measuring three feet by two throughout, with big fins besides, having nine inches of breadth across the skull and five inches across the body, with a mouth of only two inches and three quarters gape, not much larger than the circumference of the lip of an ordinary claret-glass. Any of the shark lot of the same weight would have had a gape of nine inches, exclusive of the ligaments which give some of them increased power.—*Thomas Cornish; Penzance, July 23, 1866.*

Insects on the Snow.—My respected friend, Dr. L. Imhoff, of Basle, has just favoured me with a few remarks on the subject of my paper in the July number of the 'Zoologist' (S. S. 273), which I am happy to communicate to its readers. This gentleman writes:—"It seems to me unlikely that any insects should voluntarily settle on the snow. Should they feel the want of appropriating a larger quantity of oxygen, or the necessity of cooling their bodies, they may attain their object by flying very close to the surface of the snow. On fine winter days, when snow covers the earth, we have in the plain the phenomenon that Tipulidæ, especially some species of *Chironomus*, fly about; but to my knowledge it has not yet been observed that they settle on the snow." May I ask, through the 'Zoologist,' whether anything of the kind has ever been noticed in England or abroad?—*Albert Müller; July 26, 1866.*

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

August 6, 1866.—Professor WESTWOOD, V.-P., in the chair.

A special vote of thanks to Mr. W. Wilson Saunders was passed, in acknowledgment of the hospitable reception given to the Members of the Society at Reigate, on the 6th ultimo.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—
 ‘Transactions of the Linnean Society,’ vol. xxv. part 2; presented by the Society.
 ‘Verhandlungen der K.-K. zool.-botan. Gesellschaft in Wien,’ vol. xv.; by the Society.
 ‘On the Metamorphoses of Insects,’ by Sir John Lubbock, Bart.; by the Author.
 ‘The Zoologist’ for August; by the Editor.
 ‘The Entomologist’s Monthly Magazine’ for August; by the Editors.

Exhibitions, &c.

Mr. S. Stevens exhibited a collection of insects sent by Mr. Reed from Bahia, chiefly Coleoptera, and amongst which were some fine Cicindelidæ and Carabidæ, Odontochile, Dercyllus, Scarites, &c.; also a new Cetonia from Sierra Leone; and three species of Pogonostoma sent by Mr. Gerrard from Madagascar.

Prof. Westwood said that since the July Meeting he had had an opportunity of examining the remarkable beetle then exhibited and described by Mr. Pascoe, under the name of *Ectrephes formicarum* (S. S. 322); it did not belong to the Paussidæ, nor was it allied to *Gnostus*; the mouth was different from anything with which he was acquainted, possessing enormous mandibles, with an elongated triangular or conical moveable lobe; this was another instance of the extreme modifications of form found amongst insects frequenting the nests of ants.

Mr. Janson exhibited a box of Coleoptera collected by Mr. Charles Turner in the New Forest, amongst which was *Quedius dilatatus* found in the larva-burrows of *Cossus ligniperda*.

Mr. M'Lachlan exhibited a remarkably dark variety of *Cabera pusaria*, captured by Mr. Dorville at Alphington, near Exeter; the specimen was a male, and, whilst the body retained the ordinary milk-white hue, the wings were quite fuscous.

Mr. Bond exhibited *Scoparia basistrigalis*, a new species, recently characterized by Dr. Knaggs (Ent. Mo. Mag. iii. 1), and for comparison therewith specimens of *S. ambigualis*, the most nearly-allied British species.

Mr. Bond also exhibited two specimens of *Catoptria microgrammana*, a rare coast insect, and two specimens of *Sericoris euphorbiana* (Zeller), a species which had for some years been unique as British in the cabinet of Mr. Shepherd: both species were taken at Folkestone by Mr. Meek during the present season.

Prof. Westwood mentioned that it was only within the last few days that he had bred any of the perfect insect of *Bombyx Cynthia* at Oxford; so that his prospect of a second crop of *Ailanthus* silk was this year hopeless. Others, however, had succeeded in rearing the moth at an earlier period.

Prof. Westwood directed attention to a paper by Mr. Packard, just published in the ‘Annals and Magazine of Natural History,’ in which it was asserted that the pupæ of Hymenoptera go through a series of mutations of form, analogous to those of *Chloëon*, as detailed by Sir John Lubbock. He suggested that the hive-bee afforded a good subject for observations in corroboration of this theory.

Mr. M'Lachlan mentioned the capture, on the banks of the Mole, near Reigate, of *Sisyrus Dalii* (Hemerobiidæ), on the occasion of the Society’s excursion thither, on the 6th ultimo; and exhibited a collection of cases of caddis-worms, part of which were

from Bavaria, and the rest had been collected by Mr. Albert Müller in the neighbourhood of Basle. Amongst them were some remarkable forms of the case of *Halesus digitalis*, the case (formed of sand) of *Enoicyla pusilla*, of which the larva is non-aquatic, and a singular case, of uncertain genus, formed of vegetable matter arranged transversely so as to form a partially angular tube closed by a solid operculum, in the centre of which were four small holes to admit the water.

The Secretary read a communication respecting the recent plague of locusts in Algeria, the serious character of which was confirmed by an official circular issued by Marshal Canrobert. The creatures first appeared during the month of April; coming from the gorges of the mountains, and the fertile valleys of the littoral, they descended first on the plain of the Mitidja and the Sahel of Algiers. Their mass, at certain points, intercepted the light of the sun, and produced an effect similar to that of the snow storms which, in the winter season, fall in Europe, and blot out even the nearest objects from the sight. The vegetation of the country offered an attractive bait to the destructive insects. A large portion of the colza, oat, late barley and vegetable crops were immediately destroyed, and in some parts even the interiors of houses were invaded. The Marshal used all his endeavours in encouraging the population in their efforts against the invaders; by his orders the troops were called out to help the colonists to combat the plague, and the Arabs, whose interests were also at stake, joined their efforts against the common enemy. In a few days enormous quantities of the insects were destroyed; but human efforts had little effect against those winged multitudes, which fled over the country, and only abandoned one field to fall upon another. It was impossible to prevent fecundation and the deposit of eggs, which quickly gave life to larvæ innumerable, so that the first swarms were soon replaced and centupled by new generations. The appearance of these young locusts is especially to be dreaded, on account of their voracity; the hungry myriads fell upon everything which had escaped the depredations of their predecessors. They filled up the water-courses, the canals, and the rivulets, and the troops had the greatest difficulty in preserving the water from infection. Almost at the same time the provinces of Oran and Constantine were invaded. At Tlemcen, where no locusts had appeared within the memory of the oldest inhabitants, the soil was covered with them. At Sidibel-Abbès, at Sidi-Brahim, and at Mostaganem, they attacked not only the tobacco plantations, the vines, and the fig trees, but also the olive trees, notwithstanding the bitterness of the leaves of the latter. At Relizabe and at Harba they invaded the cotton grounds. The road between Mostaganem and Mascara was literally covered with them along its entire course of fifty miles. In the province of Constantine the locusts appeared simultaneously from the Sabara to the sea, and from Bougie to Calle. At Batna, at Selif, at Constantine, at Gelma, at Bone, at Philippeville, and at Djidjelly, the people acted energetically against the invasion, but neither fire nor other obstacles offered to the progress of the insects were sufficient to prevent the destruction, which fell principally upon the European settlements. The damage done is immense, though it is impossible at present to ascertain the whole extent of the mischief, for the work of devastation is going on daily; such a terrible visitation has not been known in modern times.—*J. W. D.*

The Birds of Shakespeare. By J. E. HARTING, F.Z.S.

(Continued from S. S. 360).

“Was Mahomet inspired with a dove?
Thou with an *eagle* art inspired then.”

Henry VI. Part I. Act iv. Scene 1.

It is related that Mahomet had a dove which he used to feed with wheat out of his ear, which dove, when it was hungry, lighted on Mahomet's shoulder, and thrust its bill in to find its breakfast, Mahomet persuading the rude and simple Arabians that it was the Holy Ghost that gave him advice. (See Sir Walter Raleigh's 'History of the World,' Book I. Part i. c. 6).

“For once the *eagle*, England being in prey,
To her unguarded nest the weasel Scot
Comes sneaking, and so sucks her princely eggs.”

Henry V. Act i. Scene 2.

In comparing England to an eagle and the cunning Scot to a weasel, the poet elicits our admiration at the simile. But the inquiring naturalist, forgetful of the poet's license, will ask whether the simile is a natural one; in other words, whether the weasel is ever found in the same situation or at such an altitude as the eagle. This appears questionable, as also does the assumption that a weasel would or could suck an eagle's egg. A near relative of the weasel, however, *viz.* a marten, was once found in an eagle's nest, “The forester having reason to think that the bird was sitting hard, peeped over the cliff into the eyrie. To his amazement, a marten was suckling her kittens, in comfortable enjoyment.” (Colquhoun's 'Moor and Loch,' p. 330).

By the allusion above made to the “princely eggs” we are reminded of the princely bird that laid them, and few who have read the Plays of Shakespeare can fail to remember that beautiful simile uttered on the fall of Warwick, and which commences:

“Thus yields the cedar to the axe's edge
Whose arms gave shelter to the *princely eagle*.”

Henry VI. Part III. Act v. Scene 2.

With the Romans the eagle was a bird of good omen; Josephus, the Jewish Historian, says the eagle was selected for the Roman legionary standard because he is the king of all birds, and the most

powerful of them all, whence he has become the emblem of empire and the omen of victory. (Josephus, *de Bello Judico*, iii. 5).

Accordingly we read in 'Julius Cæsar,' Act v. Scene 3—

"Coming from Sardis on our former ensign
Two mighty *eagles* fell, and there they perch'd
Gorging and feeding from our soldiers' hands."

"When they raised their campe, there came two eagles that flying with a marvellous force, lighted upon two of the foremost ensigns, and alwaies followed the souldiers, which gave them meate and fed them, untill they came neare to the citie of Phillipes; and there one day onely before the battell, they both flew away."—NORTH'S *Plutarch*.

The ensign of the eagle was not peculiar, however, to the Romans. The golden eagle with extended wings was borne by the Persian monarchs (Xenophon, *Cyropædia*, vii), and it is not improbable that from them the Romans adopted it; while the Persians themselves may have borrowed the symbol from the ancient Assyrians, on whose banners it waved till Babylon was conquered by Cyrus.

As before observed the eagle was a bird of good omen, and hence we read:

"I chose an *eagle* and did avoid a puttock."

The name "puttock" was sometimes applied to the kite, and sometimes to the common buzzard. They were both, however, considered birds of ill omen.

Again, in Act iv. Scene 2, of the same play, we read:

"I saw *Jove's bird*, the Roman *eagle*, wing'd
From the spungy south to this part of the west,
There vanish'd in the sunbeams."

This was said to portend success to the Roman host. In Izaak Walton's 'Compleat Angler,' the falconer in discoursing on the merits of his recreation says: "In the air my troops of hawks soar upon high, and when they are lost in the sight of men, then they attend upon and converse with the gods; *therefore I think my eagle is so justly styled Jove's servant in ordinary.*"

Mr. Hogg, in a paper "On the Roman Imperial and Crested Eagles" (*Annals and Mag. Nat. Hist.* June, 1864), says: "The Roman eagle, which is generally termed the Imperial eagle, is represented with its head *plain*, that is to say *not crested*; it is in appearance the same as

the attendant bird of the "King of gods and men," and is generally represented as standing at the foot of his throne, or sometimes as the bearer of his thunder and lightning. Indeed he also often appears perched on the top of his sceptre. He is always considered as the attribute or emblem of 'father Jove'."

A good copy of this bird of Jupiter, called by Virgil and Ovid 'Jovis armiger,' from an antique group, representing the eagle and Ganymedes, may be seen in Bell's 'Pantheon,' Vol. i. Also "a small bronze eagle, the ensign of a Roman legion," is given in Duppa's Travels in Sicily &c. (2nd ed. 1829, tab. iv.) That traveller states that the original bronze figure is preserved in the Museum of the Convent of St. Nicholas (d'Arcun) at Catania. This convent is now called Convento di S. Benedetto, according to Mr. G. Dennis, in his Handbook of Sicily, published by Murray: at p. 349, he thus mentions this ensign as "a Roman *legionary eagle* in excellent preservation."

From the second century before Christ the eagle is said to have become the sole military ensign, and it was mostly *small* in size, because Florus (lib. 4, cap. 12) relates that an ensign-bearer in the wars of Julius Cæsar, in order to prevent the enemy from taking it, pulled off the eagle from the top of the gilt pole, and hid it by placing it under cover of his belt.

In later times the eagle was borne with the legion, which indeed occasionally took its name 'aquila'.

This eagle which was also adopted by the Roman Emperors, for their imperial symbol, is considered to be the *Aquila heliaca* of Savigny, which greatly resembles our golden eagle (*Aquila chrysaëtos*), in plumage, though of a darker brown. It inhabits North Africa and Palestine, and is but rarely found in Europe. A living specimen may now be seen in the Zoological Gardens, Regent's Park.

In Act v. Scene 4, of the last mentioned Play, Sicilius, speaking of the apparition and descent of Jupiter, who was seated on an eagle, says:

"* * * the holy eagle
Stoop'd as to foot us; his ascension is
More sweet than our bless'd fields: his royal bird
Prunes the immortal wing and cloy's his beak
As when his god is pleas'd."

Prune signifies to clean and adjust the feathers, and is synonymous with *plume*. The word more generally used, however, is *preen*.

Cloys, that is, “chokes” or “clogs up.” Formerly it was often written “accloyes,” *e. g.*,

“And with uncomely weedes the gentle wave *accloyes*.”

SPENSER'S *Faerie Queene*, Book ii. Canto 7.

And

“The mouldie mosse which thee *accloyeth*.”

SPENSER'S *Shepherd's Calendar*, February, 135.

The great age of the eagle is beautifully alluded to in the Psalms, where it is said of the righteous man that “his youth shall be renewed like the eagle's.” “Eagles” says Pennant, “are remarkable for their longevity. A golden eagle which had been nine years in the possession of Mr. Owen Holland, of Conway, lived thirty-two years with the gentleman who made him a present of it: but what its age was when the latter received it from Ireland is unknown.”

Another that died at Vienna was stated to have lived in confinement one hundred and four years. But even the eagle may be “outlived.” Our poet says:

“Will these moss'd trees
That have *outliv'd the eagle*, page thy heels,
And skip when thou point'st out.”

Timon of Athens, Act ii. Scene 3.

The old text has “moyst” trees. The emendation, however, which was made by Hamner, is strengthened by the line in ‘As you like it,’ Act iv. Scene 3.

“Under an oak whose boughs were moss'd with age.”

OSPREY. *Falco haliæetus*.

The osprey feeds almost exclusively on fish, and it is marvellous to see the easy and graceful way in which it captures this slippery prey.

“When they see a fish, they immediately settle in the air—lower their flight, and settle again—then strike down like a dart. They always seize their prey with their claws, the outer toes of which turn round a considerable way, which gives them a larger and firmer grasp.”* The structure of the osprey is thus wonderfully adapted to its habits; and we read

* Colquhoun's ‘Moor and Loch,’ p. 276.

"I think he'll be to Rome
As is the *osprey* to the fish, who takes it
By sovereignty of nature."

Coriolanus, Act iv. Scene 7.

FALCON (*Falco peregrinus* and *F. palumbarius*).

Throughout the whole of Shakespeare's Plays we find frequent allusions to Falconry, which in his time was much in vogue; and to judge from the accuracy and aptness with which he has employed terms used exclusively in hawking parlance, our poet must have possessed no mean knowledge of the noble art.

In the second part of *Henry VI*, Act ii. we find a scene laid at St. Alban's, and the King, Queen, Gloster, Cardinal and Suffolk appearing *with falconers halloaing*. I shall quote that portion of the scene which refers more particularly to the sport.

- "Queen. Believe me, lords, for *flying at the brook*
I saw not better sport these seven years' day,
Yet by your leave, the wind was very high;
And ten to one old Joan * had not gone out.
- King. But what a *point* my lord your falcon made,
And what a *pitch* she flew above the rest!
To see how God in all his creatures works,
Yea, man and birds are fain of climbing high.
- Suf. No marvel, an it like your majesty,
My lord protector's hawks do *tower* so well,
They know their master loves to be aloft,
And bear his thoughts above his falcon's *pitch*.
- Glo. My lord, 'tis but a base ignoble mind
That mounts no higher than a bird can soar.
- Card. I thought as much, he'd be above the clouds.
- * * * * * *

Believe me, cousin Gloster,
Had not your man put up the fowl so suddenly
We had had more sport."

"Flying at the brook" meant "hawking for waterfowl":

"Ryding on hawking by the river
With grey goshawk in hand."

Chaucer.

* Evidently the name of a favourite falcon.

Point. The fluttering or hovering over the spot where the “quarry” had been “put in.”

Pitch. The height to which a hawk rises before swooping.

Tower. To rise spirally—see under head of “Eagle,” (S. S. p. 357). The word “tower” occurs again in *Macbeth*, Act ii. Scene 4, with reference to a fact that we might well be excused for doubting, did we not know that it was related as an unusual circumstance. We are told that

“On Tuesday last
A *falcon towering* in her pride of place
Was by a mousing owl hawk’d at and kill’d.”

“Towering” or “touring” in her pride of place is here understood to mean circling at her highest point of elevation. So in Massinger’s play of “*The Guardian*.”

“Then for an evening flight
A tiercel gentle which I call, my masters,
As he were sent a messenger to the moon
In such a *place*, flies, as he seems to say
See me or see me not.”

Act i. Scene 2.

By the falcon is always understood the female, as distinguished from the *tercel* or male of the peregrine or goshawk. The latter was probably called the *tercel* or *tiercel* from being about *a third* smaller than the falcon. Some authorities, however, state that of the three young birds always found in the nest of a falcon, two of them are females and *the third* a male; hence the name of *tercel*. Sometimes we find the word written *tassel*, as in “*Romeo and Juliet*.”

“O! for a falconer’s voice
To lure this *tassel gentle* back again.”

Act ii. Scene 2.

Professor Schneider, in a Latin volume published at Leipsic, in 1788 (which contains the work of the Emperor Frederic II., ‘*De arte venandi cum avibus*;

Albertus Magnus, ‘*De Falconibus*;

as also a digest of Hubner’s work, ‘*Sur le vol des oiseaux de proie*,’ and of several ancient and rare works on falconry), enumerates the qualities of a good falconer, and tells us: “*Sit mediocris staturæ; sit perfecti ingenii; bonæ memoriæ; levis auditu; acuti visûs; homo magnæ vocis; sit agilis et promptus; sciat natare; sit audax—non somnolentus;*” &c., &c.

To *lure* was to entice back the hawk by waving “the lure,” which was a forked piece of iron or wood covered with leather and having the wings or feathers of a bird attached, and which was thrown up to entice the falcon back to the fist, after the quarry had been killed.

To this passage Mr. Staunton has the following note. “*Tassel gentle*.—The tassel, or more correctly the tiercel, is the male of the goshawk, and had the epithet *gentle* annexed to it from its docility and attachment to man.” According to some authorities the tiercel derives its name from being a *tierce* or third less than the female; but Tardif, in his ‘Treatise on Falconry,’ says it is so called from being one of three birds generally found in the eyrie of a falcon, two of which are females and the third a male: hence called *tiercelet* or the third. This species of hawk was in high esteem, for the old books on the sport, which show that certain hawks were appropriated to certain ranks of society, tell us that the falcon *gentle* and *tercel* are for a prince.

There appears to be a great deal of confusion in the nomenclature of the hawks used in Falconry. The same name has been applied to two distinct species; and one species, in different states of plumage, has received two or more names. With regard to the word *tassel gentle*, it has occurred to me that the *tercel* must be the male goshawk and the *tercel gentle* the male peregrine; the latter, a long winged hawk, being the more noble of the two, and the word *gentle*, or *gentil* as it is sometimes spelt, being used with that signification. In this view I am supported to some extent, I believe, by quaint old Izaak Walton. In his ‘Compleat Angler,’ there is an interesting conversation between an angler, a hunter and a falconer, each of whom, in turn, commends his own recreation. The falconer gives a list of his hawks, and divides them into two classes, viz.: the *long-winged* and *short-winged* hawks.

In enumerating each species in pairs, he gives first the name of the female and then that of the male. Among the first class we find:

The Gurfalcon and Jerkin,
The *Falcon* and *Tercel gentle*, &c.

In the second class we have:

The Eagle and Iron,
The *Goshawk* and *Tercel*, &c.

It would appear, therefore, from this, that the name *tercel gentle* was applied to the male *peregrine*, a long-winged hawk, to distinguish it from the *tercel* or male *goshawk*, a short-winged hawk.

The following lines bearing upon this point are extracted from Mudie's 'Feathered Tribes of the British Islands,' vol. i. p. 86.

"The *falcon* always means the *female*, and the male is called the *tercel*.

"When one year old, and before the plumage acquires the grey that characterizes the mature bird, the female is called a red falcon and the male a red tiercel.

"When fully fledged and trained (and she has not her full superiority over the male till in her mature plumage), the female is the *gentil* or *gentil falcon*, so called partly from her docility, and partly because *she never turns down the wind*, or stoops to ignoble game, as some of the other hawks, and even the tiercel peregrine, are apt to do. The name *gentil*, which is the opposite of *low* or *vulgar*, was however applied to all good hawks, even to some of the short-winged ones, such as the goshawk."

Belany in his 'Treatise upon Falconry,' says (p. 129),—"The derivation of *falcon gentle*, or slight falcon, as it is likewise called, does not appear very clear or accountable, as the bird is not only the strongest and largest, but the fiercest falcon that inhabits this island.

"It may not improbably have received the name of gentle from the Latin *gentiles*, a term applied by the ancient Romans to all strangers, or foreigners not subject to the Roman Empire, to distinguish them from the *provinciales*, or inhabitants of the province. Under this supposition then, the bird, being there considered a stranger or foreigner, may have in like manner received the name of *gentile*, which has probably been corrupted into *gentle*. The word *gentilis* as every linguist knows, is likewise used in an almost contrary sense, importing peculiar or proper to a nation, but in this light it is quite inadmissible, as the bird is not peculiar to this country.

"According to some authors the term has been given because this bird was the favourite hawk amongst the gentlemen of old. This opinion, however, carries but little weight with it, for originally the hawk was excluded from the use of those popularly styled gentlemen unless ennobled. According to the restricted forms of hawking, the falcon gentle and tercel gentle were the 'hawks appointed for a prince,' and tolerated only amongst those individuals distinguished by the epithet

noble. On this ground then the word *nobilis*, instead of *gentilis*, would doubtless and more appropriately have been the term given to it. The term has been by some supposed to have been derived from the French *gentil*, meaning neat or handsome, because of the beauty of its form."

Whatever may have been the derivation of the word *gentle*, it appears to have been most usually applied to the female falcon, which was always considered superior to the male: stronger in flight,—

"As confident as is the *falcon's* flight
Against a bird."

Richard II., Act i. Scene 3.

and possessing more powerful talons,—

"So doves do peck the *falcon's* piercing talons."

Henry VI., Part 3. Act i. Scene 4.

besides being more easily trained, and capable of being flown at larger game. Shakespeare appears to have been of this opinion when he says,

"The *falcon* as the *tercel* for all the ducks i' the river."

Troilus and Cressida, Act iii. Scene 2.

The game flown at was called in hawking parlance the "quarry," and we find this word occurring several times throughout the Plays.

"This *quarry* cries on havoc."

Hamlet, Act v. Scene 2.

To "cry on" anything was a familiar expression formerly. In 'Othello' we read.

"Whose noise is this that 'cries on' murder?"

Othello, Act v. Scene 1.

To "cry havoc" appears to have been a signal for indiscriminate slaughter. The expression occurs again in 'King John.'

"Cry havoc Kings."

King John, Act ii. Scene 2.

And

"Cry havoc and let slip the dogs of war."

Julius Cæsar, Act iii. Scene 1.

The word "quarry" also, in the language of the forest, meant a pile of slaughtered game. So in 'Coriolanus,' Caius Marcius says :

"And let me use my sword I'd make a *quarry*
With thousands of these quarter'd slaves."

Coriolanus, Act iii. Scene 1.

The beauty of the following passage, from its being clothed in technicalities, will be likely to escape the notice of such as are not conversant with hawking phraseology, but an acquaintance with the terms employed will elicit admiration at the force and beauty of the metaphor. Othello, with forcible expression, compares his young wife Desdemona to a hawk, and, doubtful of her constancy and affection towards him, exclaims,

"If I do prove her *haggard*,
Tho' that her *jesses* were my dear heart strings,
I'd whistle her off and *let her down the wind*
To prey at fortune."

Othello, Act iii. Scene 3.

By "haggard" is meant a wild caught and unreclaimed mature hawk, as distinguished from an "eyess" or nestling, which is a young hawk taken from the "eyrie" or nest.

"There is, sir, an *aiery* of children, little *eyases* that cry out."

Hamlet, Act ii. Scene 2.

By some falconers "haggards" were also called "passage hawks," from being always caught when in that state at the time of their periodical passage or migration. And as will be seen hereafter, the word "haggard" occurs several times throughout various Plays.

The "jesses" are the leathern straps fastened to the legs of the hawk to strengthen them in holding the "quarry" when struck, especially on the ground. They are consequently not removed when the bird is flown, as is the hood and other trappings.

Othello says :

"I'd whistle her down the wind."

"The falconers always let fly the hawk *against* the wind ; if she flies with the wind behind her she seldom returns. If therefore a hawk was, for any reason, to be dismissed, she was *let down the wind*, and from that time shifted for herself, and *preyed at fortune*." (Johnson).

As before observed, we find the word "haggard" occurring throughout many of Shakespeare's plays.

"She is too disdainful,
I know her spirits are as coy and wild
As haggards of the rock."

Much Ado about Nothing, Act iii. Scene 1.

"And like the haggard check at every feather."
Twelfth Night, Act iii. Scene 1.

To "check" is a term used in Falconry signifying "to fly at"; it also means to forsake the proper quarry and take after another bird. The word occurs again in the same play, Act ii. Sc. 4.

Besides the "jesses," the "bells" were an indispensable part of a hawk's trappings. These were of circular form, and from a quarter to a full inch in diameter, and made of brass or silver, and were attached one to each leg of the bird by means of small slips of leather called "bewits." The use of bells was to lead the falconer by their sound to the hawk when in a wood, or out of sight.

"As the ox hath his low, Sir, the horse his curb, and the falcon her bells, so man hath his desires."—*As You Like It*, Act iii. Scene 3.

The "hood" also was a most necessary appendage. This was a cap or cover for the head of the hawk, which was not removed until the "quarry" was started, in order to prevent the hawk from flying before the proper time had arrived.

The constable of France, speaking of the valour of the Dauphin says:

"'Tis a hooded valour and when it appears it will bate."
Henry V., Act iii. Scene 7.

The allusion is to the ordinary action of a hawk, which when unhooded *bates*, or flutters. But a quibble may be here intended between "bate," the hawking technical, and "bate" to dwindle or abate.

We read also in 'Romeo and Juliet,'

"Hood my unmann'd blood, bating in my cheeks."
Romeo and Juliet, Act iii. Scene 2.

And to any one not conversant with the terms used in Falconry, this line would be perfectly unintelligible. An "unmanned" hawk was one not sufficiently reclaimed to be familiar with her keeper; and such

birds generally “bated,” that is fluttered or beat their wings violently in their efforts to escape.

Petruchio, in ‘Taming of the Shrew,’ gives us a lesson in reclaiming a hawk : when speaking of Catharine he says :—

“My *falcon* now is sharp and passing empty,
And till she *stoop* she must not be full-gorg’d,
For then she never looks upon her *lure*.
Another way I have to *man* my *haggard*,
To make her come and know her keeper’s call,
That is to watch her, as we watch these kites,
That *bate* and beat, and will not be obedient.
She eat no meat to-day, nor none shall eat ;
Last night she slept not, nor to-night she shall not.”

Taming of the Shrew, Act iv. Scene 1.

“Stoop,” sometimes written “stoup” (Spenser’s ‘Faerie Queene,’ Book I. Canto xi. 18), and “swoop” (as in ‘Macbeth,’ “at one fell swoop”), signifies a rapid descent on the “quarry.”

“I bless the time
When my good *falcon* made her flight across
Thy father’s orchard.”

Winter’s Tale, Act iv. Scene 3.

“This outward sainted deputy,
Whose settled visage and deliberate word
Nips youth i’ the head, and follies doth *enmew*
As *falcon* doth the fowl.”

Measure for Measure, Act iii. Scene 1.

“Enmew,” in its primary sense, signifies “to enclose,” “shut up.” Hence the word “mews,” that is, the place where the hawks were confined.

* * * “To-night she’s *mew’d* up.”

Romeo and Juliet, Act iii. Scene 4.

And Gremio, speaking to Signior Baptista of Bianca, says,

“Why will you *mew* her?”

Taming of the Shrew, Act i. Scene 1.

A question presently solved by Tranio, who says,

“And therefore has he closely *mew’d* her up,
Because she will not be annoy’d with suitors.”

In the line above quoted, however, from ‘Measure for Measure,’ the

word "enmew" would seem rather to signify to "seize upon" or to "disable." This word is sometimes written "enewe." In Thomas Nash's 'Quaternio, or a Fourefold Way to a Happie Life,' published in 1633, it occurs in a spirited description of hawking at water-fowl:—

"And to hear an accipitary relate againe how he went forth in a cleare calme and sunshine evening, about an houre before the sunne did usually maske himselfe, unto the river, where, finding of a mallard, he whistled off his faulcon, and how shee flew from him as if shee would never have turned head againe, yet presently upon a shoote came in; how then by degrees, by little and little, by flying about and about, shee mounted so high, until shee had lessened herselfe to the view of the beholder to the shape of a pigeon or partridge, and had made the height of the moone the place of her flight; how presently, upon the landing of the fowle, shee came downe like a stone and *enewed* it, and suddenly got up againe, and suddenly upon a second landing came downe againe, and missing of it, in the downe course recovered it beyond expectation, to the admiration of the beholder at a long flight."

In the days of Falconry a peculiar method of repairing a broken wing-feather was known to falconers by the term "imping."

The verb "to imp" appears to be derived from the Anglo-Saxon "impan," signifying to graft or inoculate, and the mode of operation is thus described in a rare pamphlet by Sir John Sebright, entitled 'Observations on Hawking':—

"When any of the flight or tail-feathers of a hawk are accidentally broken, the speed of the bird is so injured that the falconer finds it necessary to repair them by an expedient called 'imping.'

"This curious process consists in attaching to the part that remains an exact substitute for the piece lost. For this purpose the falconer is always provided with pinions (right and left) and with tail-feathers of hawks, or with the feathers separated from the pinion, carefully preserved and numbered, so as to prevent mistake in taking a true match for the injured feather. He then with a sharp knife gently parts the web of the feather to be repaired, at its thickest part, and cuts the shaft obliquely forward, so as not to damage the web on the opposite edge. He next cuts the substitute feather as exactly as possible at the corresponding point, and with the same degree of slope.

"For the purpose of uniting them he is provided with an iron needle, with broad angular points at both ends; and after wetting the needle with salt and water, he thrusts it into the centre of the pith of

each part, as truly straight and as nearly to the same length in each as may be. When this operation has been skilfully performed, the junction is so neat that an inexperienced eye would hardly discern the point of union; and as the iron rusts from having been wetted with brine, there is little or no danger of separation."

After this explanation the meaning of the following passage is clear:—

"If then we shall shake off our slavish yoke,
Imp out our drooping country's *broken wing*."

Richard II., Act ii. Scene 1.

Besides "imping," there was another practice in use, now happily obsolete, termed "seeling," to which we find several allusions in the Plays. It consisted in sewing a thread through the upper and under eye-lids of a newly caught hawk, to obscure the sight for a time and to accustom it to the hood.

In 'Antony and Cleopatra' (Act iii. Scene 13) we read,

"The wise gods *seel* our eyes."

And in the same play (Act v. Scene 2) Seleucus says,

* * * "Madam,
I had rather *seel* my lips than to my peril
Speak that which is not."

In his beautiful soliloquy on sleep King Henry IV. says,

"Wilt thou upon the high and giddy mast
Seel up the ship-boy's eyes?"

Henry IV., Part II. Act iii. Scene 1.

"Come, *seeling* night,
Scarf up the tender eye of pitiful day."

Macbeth, Act iii. Scene 2.

And

"She that so young could give out such a seeming,
To *seel* her father's eyes up close as oak."

Othello, Act iii. Scene 3.

It is more probable, considering the use of the technical term "seel," above explained, that the poet wrote "close as hawk's."

The "quarry" usually flown at differed according to the hawk that was used. The gerfalcon and peregrine were flown at herons, ducks, pigeons, rooks and magpies. The goshawk was used for hares and

partridges, while the smaller kinds, such as the merlin and hobby, were trained to take blackbirds, larks and snipe.

The French falconers, however, do not appear to have been so particular.

“We'll e'en to it like French falconers,
Fly at anything we see.”

Hamlet, Act ii. Scene 2.

HAWK.

Hobby (*Falco subbuteo*).

Merlin (*F. æsalon*).

Kestrel (*F. tinnunculus*).

Sparrowhawk (*F. nisus*).

Although allusions to a hawk are so frequent throughout the Plays, yet there is only one passage in which any particular species is mentioned. However, as the four species above named were all employed in Falconry, I have thought it advisable to mention them.

The line above referred to, which is the only one in which a particular species of hawk is intended, occurs in ‘Twelfth Night,’ where we read,

“And with what wing the *stannyl* checks at it.”

Twelfth Night, Act ii. Scene 4.

“Stannyl” is a corruption of standgale, which is synonymous with windhover, a name for the kestrel hawk.

The meaning of the word kestrel is somewhat uncertain. By some it is derived from “coystril,” which meant a knave or inferior person.

“Dost thou love *hawking*?”

Thou hast *hawks* will soar above the morning lark.”

Taming of the Shrew, Induction, Scene 2.

In ‘Henry V.’ the Dauphin, when speaking in praise of his horse, says,

“When I bestride him I soar, I am a *hawk*.”

Henry V., Act iii. Scene 7.

And in Part I. of ‘Henry VI.’ the Earl of Warwick boasts that

“Between two *hawks* which flies the higher pitch.

* * * * *

I have perhaps some shallow spirit of judgment.”

Henry VI., Part I. Act ii. Scene 4.

The “pitch” is the extreme height to which a long-winged hawk rises before the game is sprung.

The hawking scene in Part II. of the same play has been already given under the head of “Falcon.”

Hawking was sometimes called “birding.” In the ‘Merry Wives of Windsor’ (Act iii. Scene 3), Master Ford says,

“I do invite you to-morrow morning to my house, to breakfast; after, we’ll *a-birding* together. I have a fine *hawk* for the bush.”

This was probably a goshawk, for, being a short-winged hawk, this species was considered the best for a woody country, or, as Shakespeare terms it, “the bush,” and was thought too slow for the open country.

Again, in the same play (Act iii. Scene 5), Mrs. Ford says,

“My husband goes this morning *a-birding*.”

But it would seem that “birding” did not always refer to hawking, for later on in the same play we read as follows:—

FALSTAFF. “What shall I do? I’ll creep up into the chimney.”

MRS. FORD. “There they always used to discharge their *birding-pieces*.”

Besides hawking and shooting, there is another way of taking birds, termed “batfowling” or “batfolding,” and that this method is of some antiquity we may gather from the following line in the ‘Tempest’ (Act ii. Scene 1),

“He would so, and then go *a-batfowling*.”

The following instructions for batfowling, in Markham’s ‘Hunger’s Prevention,’ &c., 1600, afford an accurate description of the way in which this sport was pursued in former times:—

“For the manner of batfowling, it may be used either with nettes or without nettes.

“If you vse it without nettes (which indeede is the most common of the two) you shall then proceede in this manner. First there shall be one to carry the cresset of fire (as was showed for the *Lowbell*), then a certaine number, as two, three or foure (according to the greatnesse of your company), and these shall have poales bound with dry round wispes of hay, straw, or such like stuffe, or else bound with pieces of linkes or hurdes dipt in pitch, rosen, grease, or any such like matter that will blaze. Then another company shall be armed

with long poales, very rough and bushy at the vpper endes, of which the willow, byrche, or long hazell are best, but indeede according as the country will afford, so you must be content to take.

“ Thus being prepared, and comming into the bushy or rough ground, where the haunts of birds are, you shall then first kindle some of your fiers, as halfe, or a thírđ part, according as your pro- uision is, and then with your other bushy and rough poales you shall beat the bushes, trees, and haunts of the birds, to enforce them to rise, which done you shall see the birds which are raysed, to flye and playe about the lights and flames of the fier, for it is their nature through their amazednesse, and affright at the strangenes of the light and the extreame darknesse round about it, not to depart from it, but as it were almost to scorch their wings in the same: so that those which haue the rough bushye poales may (at their pleasures) beat them down with the same and so take them. Thus you may spend as much of the night as is darke, for longer is not conuenient, and doubt- lesse you shall find much pastime, and take great store of birds, and in this you shall obserue all the obseruations formerly treated of in the *Lowbell*; especially that of silence, until your lights be kindled, but then you may use your pleasure, for the noyse and the light when they are heard and seene afarre of, they make the birds sit the faster and surer.

“ The byrdes which are commonly taken by this labour or exercise are, for the most part, the rookes, ring-doues, blackbirdes, throstles, feldyfares, linuets, bulfinches, and all other byrdes whatsoever that pearch or sit vpon small boughes, or bushes.”

The hawk is mentioned in ‘*Much Ado About Nothing*’ (Act iii. Scene 3), and

“ His *hawking* eye”

occurs in ‘*All’s Well that Ends Well*’ (Act i. Scene 1).

“ Twenty crowns! I’ll venture so much on my hawk or hounds, but twenty times so much upon my wife.”—*Taming of the Shrew*, Act v. Scene 2.

KITE (*Falco milvus*).

* * “ The lazar *kite*.”—*Henry V.*, Act ii. Scene 1.

Although a large bird, and called by some the royal kite (*Milvus regalis*), it has not the bold dash of many of our smaller hawks in seizing live and strong prey, but glides about ignobly, looking for a

sickly or wounded victim, or for offal of any sort. Our poet, therefore, has not inaptly called it "the lazar kite," and, alluding to its habits, in 'Julius Cæsar' (Act v. Scene 3) he says,

* * * "And *kites*
Fly o'er our heads, and downward look on us
As we were *sickly* prey."

Again, in Part II. of 'Henry VI.' (Act. v. Scene 2).

* * "A prey for *carrion* kites."

In consequence of the ignoble habits of this bird, the word "kite" was often used as a term of reproach. For example,

"You *kite*!"—*Antony and Cleopatra*, Act iii. Scene 2.

And

"Detested *kite*!"—*King Lear*, Act i. Scene 4.

When pressed by hunger, however, the kite becomes bold, and will enter a farm-yard and carry off young ducks and chickens.

"Were't not all one, an empty eagle were set
To guard the chicken from a hungry *kite*,
As place Duke Humphrey for the king's protector."
Henry VI., Part II. Act iii. Scene 2.

The synonym "puttock" is sometimes applied to the kite, sometimes to the common buzzard. In the following quotation (a beautiful simile, referring to the supposed murder of Gloster by Suffolk) it evidently has reference to the former bird:—

"Who finds the partridge in the *puttock's* nest,
But may imagine how the bird was dead,
Altho' the *kite* soar with unblooded beak."
Henry VI., Part II. Act iii. Scene 2.

It would seem that with the ancients the kite was a bird of ill omen, for in 'Cymbeline' (Act i. Scene 2) we find,

* * "I chose an eagle,
And did avoid a *puttock*."

And, alluding again to the superiority of the eagle, Hastings says,

"More pity that the eagle should be mewed,
While *kites* and buzzards prey at liberty."
Richard III., Act i. Scene 1.

The intractable disposition of the kite is thus noticed,

* * "Watch her as we watch these *kites*,
That bate and beat, and will not be obedient."

Taming of the Shrew, Act iv. Scene 1.

And it would seem that our poet was not unacquainted with the habit which the kite has, in common with other hawks, of rejecting or disgorging the undigested portions of its food in the form of pellets; for he says,

"If charnel-houses and our graves must send
Those that we bury *back*, our monuments
Shall be the *maws of kites*."

Macbeth, Act iii. Scene 4.

Another curious fact in the natural history of the kite is adverted to in the 'Winter's Tale' (Act iv. Scene 2): it is there said,

"When the *kite* builds, look to lesser *linen*."

This line may perhaps be best illustrated by a description of a kite's nest, which we have seen, that was taken in Huntingdonshire, and which is still in the possession of a friend at Newcastle. The outside of the nest was composed of strong sticks; the lining consisted of small pieces of *linen*, part of a *saddle-girth*, a bit of a *harvest glove*, part of a *straw bonnet*, pieces of *paper*, and a *worsted garter*; and in the midst of this singular collection of materials were deposited two eggs. The kite is now almost extinct in England, and a kite's nest of course a great rarity. The Rev. H. B. Tristram, speaking* of the habits of the Egyptian kite (*Milvus Ægyptius*), says:—"Its nest, the marine-store shop of the desert, is decorated with whatever *scraps of bournouses* and *coloured rags* can be collected; and to these are added, on every surrounding branch, the cast-off coats of serpents, large scraps of thin bark, and perhaps a bustard's wing."

"3rd *Servant*. Where dwellest thou?"

Cor. Under the canopy.

* * *

3rd *Servant*. Where's that?

Cor. I' the city of *kites* and crows."

Coriolanus, Act iv. Scene 5.

"Some powerful Spirit instruct the *kites*
And ravens to be thy muses."

Winter's Tale, Act ii. Scene 3.

Query, whether "muses" should not be "nurses"?

* 'The Great Sahara,' p. 392.

COMMON BUZZARD (*Falco Buteo*).

"More pity that the eagle should be mewed,
While kites and *buzzards* prey at liberty."

Richard III., Act i. Scene 1.

"To what form * * * should wit larded with malice * * * lead him to?
To be an owl, a *puttock*, or a herring without a roe, I would not care." — *Troilus and Cressida*, Act v. Scene 1.

"O, slow-wing'd turtle, shall a *buzzard* take thee?
Ay, for a turtle as he takes a *buzzard*."

Taming of the Shrew, Act i. Scene 1.

Staunton suggests that there is a play upon the words here, and that "buzzard" in the second line means a *beetle*, so called on account of its buzzing noise.

OWL (*Strix flammea*).

"A mousing owl."

Macbeth, Act ii. Scene 4.

"They say the owl was a baker's daughter."

Hamlet, Act iv. Scene 5.

Mr. Staunton, in his edition of Shakespeare's Plays, says this alludes to a tradition still current in some parts of England. "Our Saviour went into a baker's shop, where they were baking, and asked for some bread to eat. The mistress of the shop immediately put a piece of dough into the oven to bake for him, but was reprimanded by her daughter, who, insisting that the piece of dough was too large, reduced it to a very small size. The dough, however, immediately afterwards began to swell, and presently became of a most enormous size. Whereupon the baker's daughter cried out, 'Heugh, heugh, heugh,' which owl-like noise probably induced our Saviour, for her wickedness, to transform her into that bird." (Vol. iii. p. 403).

The owl has ever been regarded as a bird of ill omen, and by the superstitious its presence has been supposed to denote some approaching evil. No wonder, then, that throughout the whole of the Plays, but more particularly in the Tragedies, we find frequent allusions to the owl as the "obscure," "ominous," "fearful" and "fatal" "bird of night." This bird is mentioned at least thirty times, and at the risk of being thought tedious we have collected the following extracts

by way of illustration, for although many of them may perhaps appear merely repetitions in point of meaning, still the mode of expression differs, and it is wonderful to observe the varied language in which our poet has expressed the same thought.

“Hark! peace!

It was the *owl* that shriek'd, the fatal bellman,
Which gives the stern'st good night.”

Macbeth, Act ii. Scene 2.

“I heard the *owl* scream.”

Id.

“The *obscure bird* clamour'd the livelong long night.”

Id., Act ii. Scene 3.

“The ominous and fearful *owl* of death”

Henry VI., Part I., Act iv. Scene 2.

was, perhaps and is now, more feared by the superstitious on account of its being seen only at night or in the dusk, when it issues forth to feed.

“The night to the *owl*, and morn to the lark less welcome.”

Cymbeline, Act iii. Scene 6.

“Deep night, dark night, the silent night (is)

The time when *screech-owls* cry and bandogs howl.”

Henry VI., Part II. Act i. Scene 4.

“She sang, and made the *night bird* mute

That still records with moan.”

Pericles, Introduction.

Query, whether this refers to the owl or nightingale. See a passage under the head “Nightingale,” where an explanation of the word “record” occurs.

“The clamorous *owl* that nightly hoots.”

Midsummer Night's Dream.

“For *night owls* shriek when mounting larks should sing.”

Richard II., Act iii. Scene 3.

If the appearance of an owl by night was thought “ominous” and “foreboding” by the superstitious, it would appear still more so when seen by day.

“The *owl* by day,

If he arise, is mocked and wondered at.”

Henry VI., Part III. Act v. Scene 4.

And we read in 'Julius Cæsar' that

"Yesterday the *bird of night* did sit
Even at noonday upon the market-place,
Hooting and shrieking."

There is some difference of opinion among naturalists as to whether the power of hooting and shrieking is possessed by the same species. The general opinion, however, seems to be that the common barn or white owl does not hoot, but only shrieks, and is in fact the bird always alluded to as the screech-owl, whereas the brown owls (*Strix otus*, *S. brachyotus* and *S. aluco*) are the hooters. In the passage quoted above, both sounds are attributed to the same bird.

Another question in Natural History is raised by the following passage in 'Macbeth' (Act iv. Scene 2),

"For the poor wren,
The most diminutive of birds, will fight
Her young ones in her nest against the *owl*."

We have never known an instance of an owl seizing a bird from the nest, although such an occurrence is not improbable in the case of birds which place their nests in exposed situations, as the sky lark.

Our observant poet has truly characterized the motion of this bird on the wing when he speaks of

"The *night owl's* lazy flight."
Henry VI., Part III. Act ii. Scene 1.

The habit of breeding in retired situations is alluded to in 'Titus Andronicus' (Act ii. Scene 3),

"Here never shines the sun; here nothing breeds,
Unless the nightly *owl*."

By many its appearance is considered to forebode death, and numerous allusions prove the existence of this superstition.

"Out on ye, *owls*! nothing but songs of death?"
Richard III., Act iv. Scene 4.

"The *screech-owl*, screeching loud,
Puts the wretch that lies in woe
In remembrance of a *shroud*."

Midsummer Night's Dream, Act v. Scene 2.

“Bring forth the fatal *screech-owl* to our house,
That nothing sung but *death* to us and ours;
Now death shall stop his dismal threat’ning sound,
And his ill-boding tongue no more shall speak.”

Henry VI., Part III. Act ii. Scene 6.

“Let him that will a *screech-owl* aye be called,
Go into Troy and say there Hector’s dead!”

Troilus and Cressida, Act v. Scene 2.

That it is unlucky for an owl to appear at a birth we learn from King Henry VI., who says, addressing Gloster,

“The *owl* shriek’d at thy birth, an evil sign.”

Henry VI., Part III. Act v. Scene 6.

The following quotation I have some hesitation in introducing, for there appears to be a difference of reading, which quite alters the sense,

“No, rather I abjure all roofs, and choose
To be a comrade with the wolf and *owl*.”

Mr. Collier, taking into consideration the next line, reads,

“To be a comrade with the wolf, and howl
Necessity’s sharp pinch.”

And this seems more probably the correct reading.

The word “owl” is frequently used as a term of reproach or derision,—

“Vile *owl*!”

Troilus and Cressida, Act ii. Scene 1.

And we have the common expression, “As stupid as an owl.”

“To what form * * should wit * * larded with malice * * * turn him to? To be an *owl*,” &c.—*Troilus and Cressida*, Act v. Scene 1.

But if the owl had many enemies, it had nevertheless some friends. With witches and fairies it was always an ally.

By the former “an *owlet*’s wing” was considered “a charm of powerful trouble,” as we read in ‘*Macbeth*’ (Act iv. Scene 1), and with the latter it was generally a companion in their moonlight gambols.

“This is the fairy-land, O spite of spites,
We talk with goblins, *owls*, and elvish sprites.”

Comedy of Errors, Act ii. Scene 2.

Note. The old copy omits “elvish,” but the folio, 1632, has “elves,” which Rowe changed to “elvish.”

“Where the bee sucks, there lurk I;
In a cowslip’s bell I lie;
There I couch when *owls* do cry.”

Tempest, Act v. Scene 1.

In making my last extract with reference to the owl, I cannot do better than conclude with the quaint and characteristic song in ‘*Love’s Labour Lost*.’

I.

“When icicles hang by the wall,
And Dick the shepherd blows his nail,
And Tom bears logs into the hall,
And milk comes frozen home in pail;
When blood is nipp’d and ways be foul,
Then nightly sings *the staring owl*,
To-who,
Tu-whit, to-who, a merry note,
While greasy Joan doth keel the pot.

II.

When all aloud the wind doth blow,
And coughing drowns the parson’s saw,
And birds sit brooding in the snow,
And Marian’s nose looks red and raw;
When roasted crabs hiss in the bowl,
Then nightly sings *the staring owl*,
To-who,
To-whit, to-who, a merry note,
While greasy Joan doth keel the pot.”

THRUSH (*Turdus musicus*).

It is somewhat singular that, after so many allusions to the owl, we now come to an equally well-known bird, the thrush, and yet we can only find *three* passages in the whole of the Plays wherein this bird is mentioned.

It occurs once in ‘*A Winter’s Tale*’ (Act. iv. Scene 2), once in ‘*Midsummer Night’s Dream*’ (Act iii. Scene 1), where Bottom, the weaver, in a doggrel rhyme, sings of

“The *throstle* with his note so true.”

And in 'The Merchant of Venice' (Act i. Scene 2), Portia, speaking of the French lord, Monsieur Le Bon, tells us that

"If a *throstle* sing he falls straight a-capering."

BLACKBIRD (*Turdus merula*).

When Justice Shallow, in the Play of 'King Henry VI.', asks Justice Silence, "And how doth my cousin?" he is answered, "Alas! a *black ouzel*, cousin Shallow!" an expression which was probably used as we now-a-days use the term "a black sheep."

With the exception of this passage, there is but one allusion to the blackbird throughout the Plays, and this occurs in 'Midsummer Night's Dream.'

"The *ouzel-cock*, so black of hue,
With orange-tawny bill."

Song, Midsummer Night's Dream, Act iii. Scene 1.

HEDGE SPARROW (*Accentor modularis*).

"The *sparrow*."

Midsummer Night's Dream, Act iii. Scene 1.

"You know, Nuncle,
The *hedge sparrow* fed the cuckoo so long
That it had its head bit off by its young."

King Lear, Act i. Scene 4.

Mr. Guest (Phil. Pro. i. 280) has observed that in the dialects of the North Western counties, formerly *it* was sometimes used for *its*. So, in 'Lear,' Act i. Scene 4, we have, in a speech of the Fool, "For you know," &c., "that *its* had *it* head bit off by *it* young," that is, that it has had its head, not that it had its head, as the modern editors give the passage, after the Second Folio, in which it stands, "that it had its head bit off by its young." So likewise, long before *its* was generally received, we have *it self* commonly printed in two words, evidently under the impression that *it* was a possessive, of the same syntactical force with the pronouns in *my self*, *your self*, *her self*. ('The English of Shakespeare,' &c., by G. L. Craik; quoted by Mr. Staunton).

So, in 'Timon of Athens' (Act v. Scene 1), we read,

"The public body, * * *

* * * feeling in itself

A lack of Timon's aid, hath sense withal

Of *it* own fall."

In 'The Tempest' (Act iv. Scene 1) we are told that Cupid

"Swears he will shoot no more, but play with *sparrows*,
And be a boy right out."

"There is a special providence in the fall of a *sparrow*."

Hamlet, Act v. Scene 2.

"And He that doth the ravens feed,
Yea, providently cater for the *sparrow*,
Be comfort to my age."

As You Like It, Act ii. Scene 3.

ROBIN REDBREAST (*Sylvia rubecula*).

"With fairest flowers
Whilst summer lasts, and I live here, Fidele,
I'll sweeten thy sad grave: thou shalt not lack
The flower that's like thy face, pale primrose, or
The azur'd harebell like thy veins; no, nor
The leaf of eglantine, whom not to slander
Outsweeten'd not thy breath: the *ruddock** would
With charitable bill (O bill, sore shaming
Those rich-left heirs that let their fathers lie
Without a monument) bring thee all this;
Yea, and fur'd moss besides, when flowers are none,
To winter ground thy corse."

Cymbeline, Act iv. Scene 2.

Bishop Percy asks, "Is this an allusion to the 'Babes in the Wood' or was the notion of the redbreast covering dead bodies general before the writing of that ballad?"

Mr. Knight says, "There is no doubt that it was an old popular belief, and the notion has been found in an earlier book of Natural History."

Isaak Walton, in his 'Compleat Angler,' written in 1653, speaks of "the honest robin that loves mankind both *alive and dead*."

Instead of "winter ground," in the last line, Mr. Collier's annotator reads "winter guard," but "to winter ground" appears to have been a technical term for protecting a plant from the frost by laying straw, &c., over it.

* The *ruddock* is an old name for the redbreast, and is still used in some parts of the country.

"The *ruddock* warbles soft."—SPENSER'S *Epithalamium*, 1, 82.

"You have learned * * *

To relish a love-song like a *robin redbreast*."

Two Gentlemen of Verona, Act ii. Scene 1.

"'Tis the next way to turn tailor or be *redbreast* teacher."

Henry VI., Part I. Act iii. Scene 1.

NIGHTINGALE (*Sylvia luscinia*).

Antony and Cleopatra, Act iv. Scene 8.

Midsummer Night's Dream, Act i. Scene 2.

"It was the *nightingale*, and not the lark,
That pierced the fearful hollow of thine ear;
Nightly she sings on yon pomegranate tree;*
Believe me, love, it was the *nightingale*."

Romeo and Juliet, Act iii. Scene 5.

"Except I be by *Sylvia* in the night,
There is no music in the *nightingale*."

Two Gentleman of Verona, Act iii. Scene 1.

"Here can I sit alone, unseen of any,
And to the *nightingale's* complaining notes
Tune my distresses and record my woes."

Id., Act v. Scene 4.

To "record" refers to the singing of birds, and according to Donce is derived from the "recorder," a sort of flute by which they were taught to sing.

"And twenty caged *nightingales* do sing."

Taming of the Shrew, Induction, Scene 1.

"*Philomel*, with melody
Sing your sweet lullaby."

Song, *Midsummer Night's Dream*, Act ii. Scene 2.

Among poets we frequently find the nightingale called *Philomel*. Ovid, in his 'Metamorphosis' (Book vi. Fable 6) tells us that *Philomel* or *Philomela* was the daughter of *Pandion*, King of Athens, and was transformed into a nightingale, while *Progne*, her sister, was changed

* According to Steevens this is not merely a poetical supposition. "It is observed," he says, "of the nightingale, that, if undisturbed, she sits and sings upon the same tree for many weeks together;" and Russell, in his 'Account of Aleppo,' tells us "the nightingale sings from the pomegranate groves in the day-time."

into a swallow. Hence Philomel became a favourite poetical name for the nightingale.

“At your request? (sarcastically)

Yes, *nightingales* answer daws.”

Twelfth Night, Act iii. Scene 4.

To “sing like a nightingale” is a well-known expression, and we find accordingly, in ‘Taming of the Shrew,’ (Act ii. Scene 1),

“She sings as sweetly as any *nightingale*.”

In ‘King Lear’ (Act iii. Scene 6) Edgar tells us that

“The foul fiend haunts poor Tom in the shape of a *nightingale*.”

There is no doubt that one great charm in the song of the nightingale is that it is heard at evening, when nearly every other bird is hushed and gone to roost. We are thus enabled to pay more attention to it and hear the entire song. Probably, were this bird to sing by day, we should regard it no more than the lark or thrush.

Portia says,

“And I think

The *nightingale*, if she should sing by day,

When every goose is cackling, would be thought

No better a musician than the wren.”

Merchant of Venice, Act v. Scene 1.

WAGTAIL (*Motacilla Yarrellii*).

I can find but one allusion to this bird throughout the whole of the Plays.

Used as an epithet the word “wagtail” would denote a pert flippanant fellow.

Kent, in ‘King Lear’ (Act ii. Scene 2), says,

“Spare my grey beard, you *wagtail* !”

SKYLARK (*Alauda arvensis*).

Midsummer Night's Dream, Act iii. Scene 1.

The nightingale has not more happily inspired our early poets than the lark. Chaucer, Spenser, and, later on, Milton, have all sung the praises of this famed songster.

With your theme

I could o’ermount the *lark*.”

Henry VIII., Act ii. Scene 3.

“ It was the *lark*, the herald of the morn.”

Romeo and Juliet, Act iii. Scene 5.

“ I do hear the morning *lark*.”

Midsummer Night's Dream, Act iv. Scene 1.

“ The morning *lark* ” occurs again in ‘ Taming of the Shrew.’

“ The *lark* that tirra-lirra chaunts.”

Winter's Tale, Act iv. Scene 2.

“ Hark, hark, the *lark* at heaven's gate sings.”

Cymbeline, Act ii. Scene 3.

So Milton, in ‘ Paradise Lost,’ Book v.,

* * * “ Ye birds

That singing, up to heaven's gate ascend.”

The Dauphin, speaking of his horse, says,

“ The man hath no wit that cannot, from the rising of the *lark* to the lodging of the lamb, vary deserved praise on my palfrey.”—*Henry V.*, Act iii. Scene 7.

We thus find frequent allusions to the early rising of the *lark*.

* * * “ The busy day,

Wak'd by the *lark*, hath rous'd the ribald crows.”

Troilus and Cressida, Act iv. Scene 2.

JULIET. “ It is the *lark* that sings so out of tune,
Straining harsh discords and unpleasing sharps.
Some say the *lark* and loathed toad change eyes;
O now I would they had changed voices too,
Since arm from arm that voice doth us affray.”

Romeo and Juliet, Act iii. Scene 5.

The *lark* has ugly eyes and the toad very fine ones; hence arose a common saying that the *lark* and toad had changed eyes.

Poor Juliet wishes they had changed voices too, because, as Heath suggests, the croak of the toad would have been no indication of the day's approach, and consequently no signal for Romeo's departure.

“ Stir with the *lark* to-morrow, gentle Norfolk.”

Richard III., Act v. Scene 3.

“ When shepherds pipe on oaten straws,
And merry *larks* are ploughmen's clocks.”

Song, Love's Labour Lost.

* * * "Let his grace go forward,
And dare us with his cap like *larks*."

Henry VIII., Act iii. Scene 2.

"His grace" refers to the Cardinal, whose cap, as is usual, was *scarlet*; and it appears that one of the methods formerly, of "daring" or drawing larks, was by small mirrors fastened on *red* cloth, which attracted the birds from curiosity, when the fowler drew his net over them.

* * "The shrill gorg'd *lark*, so far
Cannot be seen or heard."

King Lear, Act iv. Scene 6.

* * "Sing as sweetly as the *lark*."

Merchant of Venice, Act v. Scene 1.

"Did ever raven sing so like a *lark*,
That gives sweet tidings of the sun's uprise."

Titus Andronicus, Act iii. Scene 1.

"The raven doth not hatch a *lark*."

Id., Act ii. Scene 3.

"The night to the owl and morn to the *lark* less welcome."

Cymbeline, Act iii. Scene 6.

"For night-owls shriek when mounting *larks* should sing."

Richard II., Act iii. Scene 3.

"What, is the jay more precious than the *lark* because his feathers are more beautiful?"—*Taming of the Shrew*.

FINCH (*Fringilla*?).

Throughout the whole of the Plays there appears but one mention of a finch, and this occurs in a song in 'Midsummer Night's Dream,' in the following line,

"The *finch*, the sparrow, and the lark."

In 'Troilus and Cressida,' however, when Thersites and Patroclus are abusing each other, the former calls the latter "*finch*-egg" (Act v. Scene 1).

HOUSE SPARROW (*Fringilla domestica*).

"Good leave, good Philip."

"Philip! *sparrow*!"

King John.

The sparrow appears to have been early known by the name of "Philip," perhaps from its note, to which Catullus alludes,

"Sed circumsiliens, modo huc, modo illuc,
Ad solam dominum usque *pipilabat*."

In Lyly's 'Mother Bombie' we read,

* * * "cry
Phip, phip, the sparrows as they fly."

And Skelton wrote a long poem, entitled 'Phylippe Sparrow,' on the death of a lady's sparrow.

"Dismay'd not this our captains?
Yes, as *sparrows* eagles!"
Macbeth, Act i. Scene 2.

"There is a special providence in the fall of a *sparrow*."
Hamlet, Act v. Scene 2.

In 'The Tempest' (Act iv. Scene 1) Iris tells us that Cupid

* * "Swears he will shoot no more,
But play with *sparrows*."

And in 'Measure for Measure' (Act iii. Scene 2), Lucio, speaking of Angelo, the severe deputy Duke of Vienna, says:—

"This ungenitur'd agent will unpeople the province with continency; *sparrows* must not build in his house, because they are lecherous."

We are told of Cressida, when getting ready to see her lover, that

"She fetches her breath as short as a new ta'en *sparrow*."
Troilus and Cressida, Act iii. Scene 2.

"And he that doth the ravens feed, yea,
Providently cater for the *sparrow*, be
Comfort to my age."
As You Like It, Act ii. Scene 3.

CHOUGH (*Pyrrhocorax graculus*).

"'Tis a *chough*!"
Hamlet, Act v. Scene 2.

In the following passage the chough, considered as a cliff bird, has been truly placed by our poet in the situation most natural to it:—

“Come on, Sir; here’s the place; stand still.”

“How fearful

And dizzy ’tis to cast one’s eyes so low!

The crows and *choughs* that wing the midway air

Show scarce so gross as beetles.”

King Lear, Act iv. Scene 6.

The allusion is to the cliffs at Dover, one of which is still known as Shakespeare’s cliff.

We may infer from the following lines that the chough was considered a bird of omen:—

“Augurs that understood relations have,

By magot pies and *choughs* and rooks, brought forth

The secret’st man of blood.”

Macbeth, Act iii. Scene 4.

* * “Russet-pated *choughs*, many in sort,

Rising and cawing at the gun’s report,

Sever themselves and madly sweep the skies.”

Midsummer Night’s Dream, Act iii. Scene 2.

The word *choughs* here would seem to refer rather to jackdaws, which from their gray heads would more appropriately bear the name of “russet-pated.” The head of the chough, like the rest of its body, is perfectly black.

In ‘Henry IV.’, in the Scene where Falstaff with the Prince and Poins meet to rob the travellers at Gadshill, Falstaff calls the victims “fat *chuffs*,” probably from their strutting about with much noise. And that Shakespeare considered the chough a great chatterer we may infer from the following lines:—

“There be * * * birds that can prate as amply and unnecessarily as this Gonzalo; I myself could make a *chough* of as deep chat.”—*Tempest*, Act ii. Scene 1.

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(To be continued.)

NOTICES OF NEW BOOKS.

'Charles Waterton, his Home, Habits and Handiwork: Reminiscences of an Intimate and most confiding Personal Association for nearly Thirty Years.' By RICHARD HOBSON, M.D. Post 8vo. 319 pp. letterpress, 16 plates. London: Whitaker. 1866.

If an Editor receive a handsome volume to review, and if that volume relate to a man to whom he, the Editor, has always looked up as a proficient in the particular study which has been his own especial choice, and who has just departed from our midst, full of years and full of honour, it becomes a duty to handle such a book with a feeling of respect almost amounting to reverence, and to suppress every comment, indeed almost every thought, that could, in the least degree, detract from the reputation of him whose character the book in question professes to portray.

That Dr. Hobson enjoyed the confidence and intimate acquaintance of Mr. Waterton no one will presume to doubt, after reading the declaration which immediately follows; that Dr. Hobson was an ardent admirer of the Squire is also manifest; but there are certain other conditions essential to the production of a good biography which Dr. Hobson does not seem to possess: on this point, however, the author and reviewer are at variance; here is the author's testimonial to his own fitness for his self-imposed task; a testimonial which was perhaps superfluous, since it is little more than an amplification of the very explanatory title.

"The late Mr. Waterton's tastes in the science of Natural History, and the more especially in consequence of his ardent and enthusiastic partiality for ornithological pursuits, were so similar and naturally so closely interwoven with my own, they so agreeably harmonized, particularly in the ornithological department of this system, and were always worked out in such mutual familiar confidence for upwards of a quarter of a century, that no surviving friend ever possessed similarly favourable opportunities which I so long and so absolutely monopolized, for acquiring an intimate and a positively detailed knowledge of the Squire's every-day habits, of witnessing his marvellous manipulating faculty, and of ascertaining his general and unreserved sentiments, particularly on all subjects associated with any branch of practical Natural History."—*Preface*, p. vii.

Johnson was fortunate in the friendship of a Boswell, the humble-minded companion who made the great lexicographer a hero, who kept self out of sight, except as a back-ground to make the portrait of his friend stand out more prominently from the canvass. Waterton is equally *unfortunate* in the friendship of a Hobson, a man who certainly believes in the merits of the departed naturalist, but who believes far more religiously in himself. Waterton is exalted by him into a king, but self is the real hero of the tale: it is "*Ego et rex meus*"—"I and my king,"* from beginning to end, from title to colophon. The very illustrations of the book, and they are generally excellent, are replete with effigies of Hobson, and the anecdotes, such as they are, almost invariably have Hobson for their hero: a man possessed of this propensity, was sure to select as salient features of character, not so much the points which ennoble Mr. Waterton, as those which exhibit Dr. Hobson in a favourable and respectable light. Thus the portrait of Waterton, as painted by Hobson, is toned down to a degree that deprives it of all heroism; and leaves it the representation of a very eccentric and peculiarly silly country squire, a portrait against which I must protest as wanting equally in truthfulness and vigour. Here are a few extracts, taken almost at random, and reprinted as vouchers for the correctness of this opinion.

"On seeing me drive up to the bridge in front of the house, the Squire has, more than once, secretly crept on all fours, like a dog, under the table, waiting my arrival in the hall, in order that I might place my great coat, &c., &c., upon this table; and whilst I was thus unsuspectingly engaged, he has, in his private retreat, commenced to growl like a savage dog behind the cloth, and has seized my legs in such a practically canine manner, that I really had no idea at the time, but that some fierce dog was attacking my lower extremities."—p. 172.

This impressive scene Dr. Hobson redescribes at page 256, where he introduces Mr. Waterton standing on one leg on the head of the guardian angel on the Castle of St. Angelo, a feat our readers will recollect, and where he tells us that he does so *in order "to remind and direct the reader's particular attention to a simply sportive freak of his, already recorded, namely, his concealing himself under a table, and imitating the growling rage of a savage dog when his years numbered nearly four score, which practical joke he not only excessively*

* The late Mr. Waterton's love of Latin quotations is familiar to all readers of the 'Zoologist.' Dr. Hobson, in condescension to the requirements of his readers, anglicises every scrap in the manner here adopted.

enjoyed at the moment, but, in high glee, and with all the animation and gaiety of juvenescence on his part, reported to a friend who accidentally arrived soon afterwards.”—p. 256.

This seems to have made a deep and lasting impression on the doctor; but other instances of greatness await us.

“When Mr. Waterton was seventy-seven years of age, I was witness to his scratching the back part of his head with the big toe of his right foot. He knew no fear; and in daring enterprise, or in what is vulgarly termed ‘pluck,’ my friend signally excelled by comparison with the amount usually allotted to man.”—p. 57.

In this case one scarcely knows whether to admire more the daring act of the hero, or the very inconsequent reflection it has elicited from the biographer. But to proceed.

“I have frequently, in painful suspense, and much against my own inclination, seen the Squire, when beyond seventy years of age, hop on one leg along the brink of a rock forming the highest terrace in the grotto, whilst the other leg was dangling over the chasm below; and when thus hopping at a rapid rate, he would whirl himself entirely round in the air, and dropping on the other foot, would return again by hopping back on the contrary leg.”—p. 113.

“I have seen the Squire repeatedly sitting on the grass, or on the carpet, crosslegged, as tailors sit on their work-board, when he would, to the astonishment and great delight of any surrounding friends, rise up into an erect position, without touching the ground with either hand.”—p. 114.

“He would frequently come out to welcome me, even in his slippers, and prove his pleasure to receive me by actually dancing down the whole length of the broad flagged walk, occasionally throwing one of his loose slippers from his foot high up in the air above his head, and expertly catching it in his hand in its descent.”—p. 173.

It is a more agreeable duty to give extracts which exhibit something more of Mr. Waterton’s character as a naturalist, in which light alone we desire to consider him. As an instance, take this winter sketch of his favourite pond.

“Apart from the breeding season, coots are very numerous at Walton Hall. They are continually feeding and sporting on the lake, within a short distance from the windows of the house, together with countless thousands of a great variety of water-fowl. During the severe winter months, when the whole lake is one sheet of ice, its appearance would now and then astound an old and even travelled

ornithologist, as it not unfrequently occurs that you may see nearly the whole frozen lake literally covered by a startling variety of water-fowl. This multitude of visitors on the lake, in winter, consists (and frequently at the same time) of cormorants, teal, tufted ducks, pochards, widgeons, the garganey, the smew, the shoveller, and now and then of the velvet and the common scoters, together with most extraordinary numbers of the wild duck. Thousands, especially of the latter, rest in such close proximity to each other as sometimes to conceal even any appearance of ice. They will thus silently congregate for hours in succession in a perfectly quiescent state, when sitting on the ice. You will see the Egyptian and Canada geese, which are permanent residents in these grounds, wandering here and there in vain and anxious search for water, whilst the apparently indolent and listless herons then stand out on the banks of the frozen lake isolated and prominently interesting objects, perfecting and gracefully beautifying this enchanting scene of natural history. The stillness and complete quietude on the icy surface of the lake and its immediate environs, evidently inspire the birds with a relying confidence and an assurance of safety which you do not meet with elsewhere. All living nature, as if grateful for the Squire's protection, appears to have formed a positive attachment to this special locality. That birds, however, should prefer this to other land and water resorts is not surprising, when we know that in other places they are generally surrounded by enemies, and, consequently in perpetual fear, whereas here they are fostered and protected on every side, and live in peace and happiness."—pp. 90—95.

This is very interesting and fundamentally Watertonian, notwithstanding the Hobsonian ornamentation observable here and there; but the following passage on the same subject, the pond and its birds, we may assume to be purely Hobsonian; there is not a particle of Waterton in it.

"They [the birds] seem to be devoted in admiration of the treasures they so carefully conceal and protect, and, with their wide-spread wings, and extended abdominal feathers, manifest an anxiously instinctive solicitude to impart a genial warmth to their eggs, as if fully aware that this extension of feathers would absolutely tend to develope the embryo contained within them."—p. 138.

Many of our readers will recollect that Mr. Waterton heard year after year, the nightingale at Walton Hall. Dr. Hobson improves the fact after the following fashion:—

“Here the nightingale pays its annual and cordially welcome visit, and is listened to at the Hall evening after evening, with infinite pleasure, melodiously warbling its charming song in its silent and secure retreat.

“Whence is it that amazed I hear,
From yonder wither'd spray,
This foremost morn of all the year,
The melody of May?

But thee no wintry skies can harm,
Who only need'st to sing
To make e'en January charm,
And every season spring.”—p. 86.

Now either this quotation is totally without meaning, and merely thrown in for effect, or it is intended to convey the idea that at Walton Hall the nightingale sings from a withered spray on New Year's Day: we entirely acquit the Squire of any participation in this unfortunate blunder.

There is one subject treated at some length in this volume, on which we can cordially agree with the sentiments expressed by the Squire and his biographer: we allude to Mr. Waterton's reception of the impostor Green, a name endeared to all the wonder-mongers of Natural History. So manifest has been the success attendant on this man's skilful construction of toad-holes and toad-narratives, that the “toad-in-stone” fiction may be said to be indebted to him for more than half of its present popularity. Green is the Newton, the Cuvier, the DeCandolle of a science he may be said to have made peculiarly his own.

“About the year 1847 or 1848 a clever and ingenious fellow, living in Leeds, of the name of Green, very adroitly duped some would-be-scientific proficients, who, it was then said, modestly estimated their own natural-history attainments at no inferior rate; but the sequel will better inform us on this delicate point. Green cleverly managed to accomplish his mechanical labour, and to gain his ends for a time, among those self-esteeming cognoscente with considerable ability and decided success, in the following manner.

“He destroyed a toad, without in any way disfiguring it, and having procured a large block of coal, he split it into two parts; he then neatly excavated a portion in the lower half, the form and size of this indentation being precisely adapted to correspond with that of the toad, into which cavity he placed the reptile already prepared for its berth,

leaving its back slightly projecting. In the upper half of the block of coal a slight excavation was made, just sufficient to admit the small projection of the back which I have already named. When these two halves were placed in close apposition the toad exactly fitted the excavations, and the two halves of the block precisely fitted each other, so as to convey the impression that the toad had been thus accidentally imbedded in its present position in by-gone ages, when it might be supposed that the surrounding matter was in so fluid and yielding a condition as to form a mould for this batrachian reptile. Green confidently asserted that this block of coal was from a colliery at or near Osmondthorpe, and professed to know the precise number of fathoms below the surface whence it was obtained. With great apparent simplicity he detailed the various circumstances of his becoming possessed of this monstrosity, by saying that when walking up Wade Lane, in Leeds, behind a coal-cart, a large block of coal accidentally fell from the load, and by its concussion on the pavement split into two parts,—that he was thunder-struck to see a living toad in the lower half,—and that he immediately seized both halves and took them home as a valuable booty. On exposure to the air, however, he observed, ‘the toad died without a struggle.’ This fellow, whose powers of assumption were largely developed, not only succeeded, I have understood, in persuading three different parties to credit his absurd and false statement, but actually gulled them into being purchasers of what he very truly, but very unintentionally, called ‘unnatural productions.’ It is somewhat singular that these three artificial products should have fallen into the hands of three *reputed* naturalists.

“By the way, Green did not display his wisdom, nor his usual tact, in disposing of so many specimens of his handicraft at no greater distance from each other than York, Leeds and Holbeck, as of course the discovery of one deception would be very likely to lead to and expose the revelation of the other two.

“This gross imposition, however strange it may appear, remained undiscovered for so long a period, and the sums received for those fictitious specimens were so richly remunerative, that Green was emboldened to fly at higher game, and actually hazarded a call at Walton Hall, ambitiously hoping to dispose of his hitherto highly-approved, although misrepresented wares, to the universally recognised giant in Natural History. The foundation on which Green rested for success was spurious, and he made his essay in a quarter highly gifted with the powers of acutely distinctive discrimination. He dwelt too

much upon his previously experienced powers of deceit, without weighing the ordeal of the keen, the intelligent, the searching, the scientific, and the antagonistic eye he had on this occasion to encounter. This indiscreet step was a woeful mistake on the part of the hitherto skilful and experienced impostor. The Squire fortunately was at home, put in an appearance, and received the stranger, without the slightest previous knowledge of the man, and without a suspicion that the toils were to be spread for him, or that dust would be thrown in his eyes by so cleverly manufactured a falsehood. I will endeavour to state what passed during this interview, as nearly as possible, in Mr. Waterton's own words, having repeatedly heard him narrate the conversation with apparently great pleasure, and especially as regarded his immediate discovery of what he always termed the 'clumsy fraud.' Whenever the subject was broached, the Squire usually commenced by saying, 'On the occasion of Green's visit to my house, I happened to have a gentleman in the room with me, learned in many things, but not in Natural History. When this fellow Green exposed his counterfeit and fabricated monstrosity for a professed inspection, but in reality for nefarious sale, I, without any difficulty, instantly discovered the deception, and anxious to let my learned friend into the secret, without letting Green know what my private opinion was, I said to my visitor, '*Annosa vulpes haud capitur laqueo*,' but did not anglicise it by adding, 'An old fox is not to be caught with a springle.' As, however, I smiled when addressing my learned friend, who was still in the room and manifestly enjoying the prospective finale, Green evidently concluded that my scrap of Latin, although unintelligible to him, was laudatory of his exhibition, and therefore appeared more and more satisfied with his apparently exalted and self-established but really unenviable position. At length, gathering still more assurance, he coolly looked me in the face, and with a grinning smile of self-approbation, observed, 'Did you, Mr. Waterton, ever witness so great a curiosity in your life? and you must have seen many curious things in your travels in foreign countries, I suppose.' My reply was expressed with an intentionally stern countenance, 'Sir, in all my travels, at home or in 'foreign countries,' I never met with so great and so unpardonable an impostor as you. Get out of my house instantly, you scoundrel, and if I ever hear of your offering this gross imposition for sale again, rest assured that I shall expose you right and left.' When this vagabond had fairly taken his departure, and finally turned his back on the house, my friend, who vastly enjoyed the concluding stormy scene, and more

especially what he jocosely designated my terminating benediction, expressed his great surprise that the flimsy fiction should have escaped detection, which I so instantly discovered, particularly, he observed, as this unparalleled imposition had been previously examined by so many experienced naturalists, when, really without any intention of lacerating the thickened cuticle of these self-styled natural-history celebrities, I could not refrain from replying, 'Very true, sir, and I assure you that I am and ought to be grateful.' '*Beati monoculi in regione cæcorum*'—'Happy are the one-eyed in the country of the blind.'—pp. 190—5.

With this quotation we must bid the Squire "farewell," until some kindred spirit shall arise, and so hold his mirror up to Nature that we may see a faithful portrait of a man for whom, from our very boyhood, we have felt the warmest affection. Dr. Hobson has not done this: he mistakes blemishes for beauty-spots; he parades eccentricities as accomplishments; and he omits those particulars of Waterton's life and death which would give an intrinsic value to the volume and impart a melancholy interest to the memory of the departed.

EDWARD NEWMAN.

Zoological Notes from Arran. By EDWARD R. ALSTON, Esq.

JULY, 1866.

As I am not aware that any account of the fauna of Arran has ever been published, I venture to offer the following notes, collected during a visit in July. Of course I am unable to give full catalogues, but hope to be able to show that the quadrupeds and birds are not devoid of interest, although not presenting such novelties as the geology, botany and marine zoology of that favoured isle.

The southern reader must bear in mind that Arran is a mountainous island, some forty miles in length by about twenty in breadth. Cultivation is almost entirely confined to a belt round the coast; while the interior is occupied by wild moors and hills, which rise towards the north into a cluster of lofty granitic mountains, whose shattered and fantastic peaks, inaccessible precipices and deep narrow glens present some of the most magnificent scenery to be found in Scotland. There is but little wood, except thickets of dwarfish birch-trees in the glens, and the plantations around Brodick Castle: but the shore is lined by the ancient "raised beech," a series of low water-worn cliffs

about from twenty to thirty feet high, pierced by numerous caves, and covered with thickets of hazel, birch, &c., which give shelter to many of the smaller birds. The whole island, except a few farms, belongs to the Duke of Hamilton, and all game is strictly preserved, the present head keeper being Mr. Haliday, whom I have before mentioned as a most trustworthy observer (Zool. 9514), and to whom I am again indebted for much information.

Quadrupeds.—The native quadrupeds of Arran are very few in number: the hedgehog and mole are, I believe, unknown, as are also the weasel, stoat, polecat, badger, squirrel, &c. The otter is common, however, and rats, and house cats run wild, do their best to supply the place of other "ground vermin." Rabbits and hares are numerous, but have probably been introduced from the mainland. No deer are naturally found in the island, but two species have been imported, and have greatly multiplied. Of these the first is the guarupuco (*Blastocerus paludosus*) from South America: these inhabitants of the tropics were introduced some years ago; they inhabit the woods about Brodick, and appear to be completely acclimatized. In size they are rather larger than the roe-deer, and the horns of the male somewhat resemble those of that species in form, but are curved boldly forward. The second species is the red deer, of which a few pairs were brought over from the mainland about seven years ago: they are now plentiful throughout the island, inhabiting the woods and cultivated fields more than is usual with this species in Scotland. Being little disturbed they are by no means shy, and, owing to plentiful food, an unusual number of the stags carry fine heads: I saw several with from ten to twelve points.

Birds.—In former days the king of birds held his court among the rocky peaks of Arran, but of late no eyrie has been known, although the memory is still preserved in the Gaelic names of some of the hills, as, for example, "Tornidneon" at the head of Loch Ranza, which, being interpreted, means "the heap (or hill) of the bird's nest." The peregrine, however, still breeds in several places: this season five nests were taken, old Barr, one of the last falconers in Scotland, having come for nestlings. Locally the peregrine is termed the "game hawk." Of other birds of prey the kestrel is very plentiful, and the merlin, sparrowhawk and hen harrier are also found.

Most of the usual perching birds of Scotland seem to inhabit the cultivated coast line, whitethroats and linnets being particularly numerous in the furze along the shore. Whinchats and stonechats

enliven the solitudes of the glens, and on the hills the meadow pipit and twite abound. The holes and crannies of the lofty rocks are the abode of vast numbers of jackdaws, but I saw no rooks, and only one or two carrion crows. On the north-western coast, where human habitations are few and far between, both swallows and martins appear to build on the low cliffs; at least we saw numbers of both species hawking along the shore, and frequently flying up to nooks and corners in the rocks, but we were not near enough to distinguish the nests.

Both black and red grouse are abundant: the latter, like those of Argyleshire and the north generally, sit well throughout the season, instead of soon assembling in large "packs" like those of the South of Scotland. I saw a preserved specimen of a "gray hen," killed in the island, which had partly assumed the plumage of the male. Should the experiment of introducing the Norwegian willow grouse into this country ever be made, a better place than Arran could not be found. Here the strangers would be safe from poachers, both biped and quadruped, and they would have their choice of luxuriant heather, bare rocky hills, and large thickets of dwarf birch. Such an experiment, carefully conducted, might do much towards settling the question of their identity with our native bird.

Of waders, the golden plover, peewit, curlew and snipe breed on the moors, and the ring dotterel, oystercatcher and common heron are all plentiful along the shore. Woodcocks are numerous in winter, but I did not hear of their breeding in the island.

Arran appears to have no breeding-station for sea-birds, but it is visited by numbers from the Bass Rock and other localities. Of gulls I observed the kittiwake, common, herring, lesser and greater black-backed and the blackheaded species: of these the greater blackbacked seems to be the rarest.

Reptiles.—I believe that both the common frog and toad are found in Arran, but *the* reptile of the island is the adder or viper, which is extremely plentiful on the warm sunny glens and hill-sides. As on the mainland it often destroys sheep, probably when trampled on. The black variety, which is extremely rare in Scotland generally, is not uncommon in Arran.

Fish.—Of these I can say but little. The small burns contain multitudes of common trout (*Salmo fario*), generally of very small size, and in some of them the sea or salmon-trout (*S. trutta*) is also found. The usual sea-fish are taken along the coast, including the "John

Dory" (*Zeus faber*),—which is there known as the "golden haddock,"—and herrings are extensively taken at Loch Ranza.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, N. B., August 18, 1866.

Preservation of Organic Matter by Exclusion of Atmospheric Air.—On the 14th of August a workman brought me a large mass of old wall material, similar to that of which the celebrated Roman wall of this town is built. The man was very much excited, for there, sticking up in the mass, but firmly fixed in it leg downwards, was a chicken's foot, looking as fresh and as perfect as though it had been that morning cut off a recently-killed fowl. The man stated that the foot was found, just as it then appeared, when the mass of old wall among which they were digging a foundation near the town wall was broken up. With some slight misgivings I gave the man his tip, and he went away rejoicing. As soon as he was gone I got my hammer and chisel, and having cut away the mortar and stone, the foot dropped out of its hole, with about an inch of the tarsal bone attached to it. It looked now very like a hoax to get beer-money. I pulled up, however, a portion of the jagged skin at the broken end of the tarsal bone, and I found not only that the bone was in a crumbling condition, but that it was filled with a soft, white, oleaginous-feeling mass, which I at once recognized as *stearine*, and then I knew that the chicken's leg had remained hundreds of years in the position in which it was found, and yet had retained the freshness of its living state: it is now shrivelling up and changing colour, and will, I dare say, very soon assume a mummified character. This is a good illustration of the fact that organic matter preserved from atmospheric air may be preserved for an indefinite time uninjured and unchanged, as I demonstrated some years ago was the case with the corn grain, which under similar circumstances will remain undecomposed, and consequently vital, for any amount of time that the conditions are observed.—*Dr. C. R. Bree* (Colchester), in the '*Field*' Newspaper of August 25, 1866.

A Sagacious Dog.—A shepherd's dog, accustomed to take his master's meals to him in the field in a tin kit with a lid, was on one occasion, when performing this service, met and interrupted by another dog. A quarrel ensued, and in the fray the lid of the kit was knocked off. When the quarrel was over, the shepherd's dog resumed his duty of conveying the kit to his master. His sagacity taught him that the kit and the lid belonged to each other, but how to get them together and as one again he had no idea of, so he took up the kit in his mouth and carried it a distance, and then went back for the lid and carried that a considerable distance beyond the kit, and thus continued to carry each in turn until he reached his master. This occurred at Great Bircham, in the county of Norfolk.—*Robert Tillyard*; *Thorpe Hamlet, Norwich*.

Female of the Roe-deer with Horns.—A few days ago, being anxious to inspect a certain portion of the Black Forest, in the direction of Kippenheim, and also for the express purpose of seeing how this sort of shooting was done, I accompanied a friend at an early hour, and just before the heat of the sun had dried up the spangles of dew upon the leaves and grass, I found myself in the centre of a deep belt of woodland stretching away for miles on both sides of us. The first few notes on the little pipe attracted the notice of a doe, who, with two fawns trotting at her side, came up and

leisurely inspected my friend. Not being what we wanted, we took off our hats to her, and patiently waited for the monarch of the forest to make his appearance. Presently he did so, but approaching very cautiously: this is always the case with the bucks; the does come within five yards, and have a good look at you. My friend had a shot, but unfortunately missed. We then proceeded to another place, a sort of ravine, on one side of which we were posted. No sooner had the call sounded than the rapid foot-fall of an approaching roe was heard. A second or two after a pair of horns appeared above the bank, and my friend and I fired, rolling the deer over to the bottom of the ravine with a ball through the neck and head. What was our surprise and that of the keeper, on descending to where the deer fell, to find it was a doe, but with a pair of horns. The horns were covered with hair, but perfectly hard. One was about six inches long, with a small branch; the other about three inches without any branch. But one occurrence of this sort has ever been heard of in these parts.—*Anon., in 'Field' Newspaper.*

Ball of Cow's Hair.—My father has in his possession a ball somewhat similar to that described by Mrs. Battersby in the last number of the 'Zoologist' (S. S. 385), but of much larger size. Its shape is that of a flattened sphere, the diameter being $2\frac{1}{2}$ inches by $3\frac{1}{4}$ inches, the weight 5 ounces. The exterior is rough, of stony hardness and earthy colour; the interior a solid mass of cow's hair: there is no central hollow, as in the case described by Mrs. Battersby. The ball was taken many years ago from the stomach of a cow, and I have no doubt was formed in the manner suggested in the note appended to Mrs. Battersby's communication, but it is not so easy to understand how a ball with a central hollow could be so produced.—*Edwin Birchall; Bradford, September 1, 1866.*

Ornithological Notes from North Wales.

By JOHN CORDEAUX, Esq.

JULY, 1866.

The following observations are written from notes taken during a recent tour through a portion of North Wales. I have selected from my note-book what I thought would most interest the readers of the 'Zoologist.'

Kestrel.—This species is extremely common in North Wales. Their usual nesting-place is a ledge or fissure of some precipice inaccessible to bird-nesters, and this circumstance, conjoined with the scarcity of gamekeepers, probably accounts for their numbers. I found two nests thus placed within twenty yards of each other on the southern face of the cliff called Craig Cwm Bychan, a buttress of the noble Mynydd Mawr, overlooking the lovely Llyn Cwellyn. One of these nests was built on a narrow ledge of this rock, protected from above by an immense projecting crag forming a natural canopy. The

other was built in a narrow fissure of the same cliff: the sticks forming the foundation of this nest were laid across the fissure bridging it over, and on this platform the true nest was placed. By climbing the opposite crag I had, with the assistance of my telescope, a very perfect view of the domestic arrangements of the kestrels: both these nests contained four young birds nearly fledged.

Common Buzzard.—I was delighted to find that this now rare bird is not yet altogether banished from the country. From all I could ascertain there are certainly one or two pairs to be found in the Snowdon district. A pair of buzzards have for some years nested on one of the precipices forming the western Basin of Snowdon, almost overlooking the source of the Gorfai. Last year, so I was informed, three young ones were reared and got away from this nest; this year only one. On the 14th, when exploring the western Basin, I saw one of the old buzzards soaring eagle-like over the eyrie, uttering at intervals its wild, sharp and somewhat melancholy cry; it was answered from the neighbouring rocks by the young bird, which had some days previously left the nest. Stretched on the ground, with my telescope resting on a boulder, I slowly swept the face of the opposite cliff, and, although guided to the spot by its constantly repeated cry, so nearly did its plumage assimilate to the gray lichen-coloured crags, that I looked in vain, and might, after all, have gone away without seeing it, had it not condescendingly left its lofty perch, and slowly sailing overhead, its wings perfectly motionless, and gradually lowering in a few graceful sweeps to the bottom of the hollow, pitched not very far from my position, on the top of a great upright stone, at last affording a splendid opportunity for examining it. This bird had a great admixture of white in its plumage, appearing all over mottled with brown and white. Sitting thus bolt upright on the old weather-worn boulder, he looked anything but what he is called—a dull, inactive, stupid bird. While thus stretched on the mountain side, watching one of the few remaining buzzards left in the country, I could not but regret that the senseless rage for overstocked preserves should have all but deprived us of our noblest birds of prey. What a charm did these wild birds give to the still wilder scenery; for, except in old Norway, I have never seen a wilder spot. Girt with gloomy cliffs up to the very clouds, all jagged and splintered along the summit, terrific in their wildness and broken ruin, but still beautiful, “for like the walls of some vast temple they stand roofed with sky.” Below a wilderness of stone, on every side rocks and giant boulders heaped and piled together in the wildest

confusion. Once they formed part of Snowdon, but ages since were rent and hurled from the parent mountain, and slowly borne downwards on the primeval glacier to their final resting-places. The heat was intense, rendered doubly so by the reflection from the surrounding cliffs; saving the wild melancholy wail of the buzzards, there was not a sound in this wild spot. No cry of small bird, not even the hum of an insect's wing broke the intense silence: all Nature seemed to rest hushed into repose by the blaze of the noonday sun. The young buzzard on the rock, and the parent bird, wheeling slowly above in those magnificently graceful circles, were the only living things which gave animation to the scene. I some days afterwards heard the cry of a buzzard from the rocks in the Pass of Aberglaslyn, but did not succeed in rising the bird.

Raven.—By no means uncommon among the Welch mountains: I saw several during my stay in Wales. They may frequently be seen near the summit of Snowdon, doubtless attracted by fragments of provisions cast away by the tourists who mob the mountains during the summer and autumn months. The man on the mountain informed me that he had for four years noticed one raven in particular, as a constant hanger-on about the summit; he knew it by its having lost a leg. I observed a pair flying about the huts at the top during the half hour of dense mist I had the pleasure of spending there.

Chough.—During my stay on the shores of Llyn Cwellyn, Mr. Roberts, the proprietor of the "Snowdon Ranger Hotel," informed me that, as he called them, "a curious breed of jackdaws" nested every year on the opposite side of the llyn in the precipices of the Mynydd Mawr: he described them as having "red legs and bills, the bills thinner and longer than the jackdaws and turned downwards;" that after the breeding-season they retired with the young broods to the elevated sheep pastures; and that they might be found more or less during the year in the neighbourhood of Llyn Cwellyn,—he had shot three from the rocks last year; that they usually nested in the same overhanging cliffs as the kestrels. Some he had seen in an old quarry to the left of the Caernarvon road. Although on several occasions I visited this rock I was not fortunate in meeting with the birds. It is certainly an admirable situation for a breeding-place for the choughs, and perfectly inaccessible to the most daring birdnester. There were several holes and fissures, which, judging from the whitewash on the outside, had lately been used for nesting purposes, but no choughs, old or young, were seen; nothing but the kestrels before mentioned. I afterwards

spent many hours in exploring the recesses of the neighbouring hills in search of these birds, but without any luck, and cannot positively say I saw any, although I once came near a small party of jackdaw-like birds on these uplands, but before my telescope could be brought to bear upon them they were over the hill top, and I saw them no more. Other parties spoken to on the subject corroborated Mr. Roberts's statement as to the "red-legged jackdaw" breeding here. I very much regret I cannot establish the fact from my own personal observations; and have been led to make these remarks trusting that some brother ornithologist may one day visit the neighbourhood of Llyn Cwellyn, and be more fortunate in his search after the choughs.

Gray Wagtail.—This graceful species is unmistakably the bird of the mountain stream, and is very common everywhere in the mountainous parts of the country, delighting in the vicinity of water; and where the turmoil is greatest, there this pretty wagtail is most at home, nimbly running over the water-splashed boulders, and venturing so close to the rushing torrent that the wonder is it is not swept away. Unlike our familiar yellow wagtail, the gray species is seldom seen far from water; it is essentially a water-loving bird.

Cuckoo.—When looking for some plants in one of the bogs at the base of Snowdon; I put up a young cuckoo from some low bushes: it flew some short distance, and settled on a flat stone on the moor, all the time closely attended by its foster-parents, two meadow pipits, who exhibited the greatest solicitude for the safety of their charge. I watched them for some time, and was greatly amused by the efforts the pipits made to feed their child: this they could only accomplish by perching on an overhanging spray of heath, the great bird, which was nearly fully fledged, quivering its wings, and opening its mouth to such an extent as to threaten the disappearance of the little dupes. I followed the cuckoo for some distance on my way down to the valley, as it flew forward from stone to stone, all the time closely followed up by the small birds; the last I saw of them they were sitting altogether on the top of a stone wall crossing the moor.

Swift.—This species is extremely plentiful in North Wales, and appears far more generally distributed throughout the country than is the case in England. I observed them in large numbers about the town and vale of Llangollen, more particularly in the neighbourhood of Valle Crucis Abbey, which, from the numbers resorting thither, is evidently a "happy hunting-ground."

Sandpiper.—No bird is more generally met with in this district than the sandpiper: not only are they found on the banks of its many streams and the larger lakes, but almost every little tarn has its pair or two of sandpipers, and their shrill cry, as they flit over some dark mountain llyn, is often the only sound which greets the wanderer in these wilds. I observed several pairs about Llyn Cwellyn: seldom disturbed they are unusually fearless, and I have watched them as they ran along the shingle within a few yards of my position, as if perfectly aware they were safe: they not unfrequently run along the wall-tops bordering the streams. Their most favourite promenade, however, is along the rail of some cattle-fence projecting out into the lake. The nest is usually placed amidst the rank aquatic vegetation bordering the llyns: sometimes, I suspect, in a hole in a wall, when fishing I have seen sandpipers enter the holes between the round boulders built up in these Welch walls, and, from their solicitude that I should leave the spot, had evidently a nest at hand. On certain nights, from some cause or other, perhaps from a change in the weather, sandpipers are extremely noisy: one night in particular, from ten to eleven o'clock, the Cwellyn Valley seemed quite lively with their constantly repeated call-notes. I found it impossible to fix the locality from which the cries proceeded; apparently they came from every point of the compass, often sounding far up amongst the mountains. I never heard the sandpipers so noisy as they were on this night, and, judging from their incessant calls, there must have been several on the wing.

Lesser Blackbacked Gull.—This gull is said to breed in small numbers in some parts of the Principality. I was told there is a colony of them in a boatless tarn near Snowdon, about ten pairs of these gulls breeding there; I had not time, however, to visit it. I observed several of them during my stay in the Vale of Cwellyn, at one time eleven together, and one mature bird in particular was a daily forager along the shores of the llyn.

JOHN CORDEAUX.

Great Cotes, Ulceby, Lincolnshire,
August 22, 1866.

Ornithological Notes from Norfolk in May, June and July.

By HENRY STEVENSON, Esq.

(Continued from S. S. 264.)

Migratory Warblers.—Owing probably to the prevalence of N.E. winds at the time, bartailed godwits were unusually plentiful on Breydon this spring, between the 7th and 21st of May, and a large number were killed in every state of change. Having had the opportunity of examining and dissecting a large series of specimens, I may say that I found the small richly coloured birds invariably males, the larger and less even coloured ones females. In one or two instances I found the beaks in the males nearly as long as those of the females, but all the other measurements invariably less. Some of the earliest killed males (probably old birds) had attained as rich a summer plumage as others killed a fortnight later, but the latest females were rather buff than red, as compared with their mates, and earlier ones had the full gray tints of the winter dress. Very few knots appeared this season, but on the 19th of May a variety of different species appeared both on Breydon “flats” and on the beach at Yarmouth: these included a pair of land dotterel, a female spotted redshank, three reeves, several black terns, gray plovers in full summer plumage, turnstones and sanderlings.

A blackwinged stilt (*Himantopus melanopterus*) is also said to have been seen on the beach, and followed by a gunner as far as Caister, but without success, as the artillery practising with the big guns disturbed all the birds which appeared at that time.

Mr. F. Harmer, of Yarmouth, shot a pigmy curlew, in summer plumage, on Breydon, on the 27th of April, in company with three dunlins, and two gray plovers in half change. Four reeve’s eggs, laid on Hickling Broads, were shown me on the 19th of May, and I have since learned that two or three pairs remained to nest in the same locality—their last stronghold in this county.

Marsh Harrier.—Two or three of these birds which, if permitted to live, would still breed constantly in our “Broad district,” were killed during May at Hickling, one pair being no sooner destroyed than another took their place,—migrants evidently searching for suitable nesting-places.

Spotted Crake.—I have known of two nests of this species taken at Hickling during the past summer.

Pied Flycatcher.—A pair shot at Salthouse, near the sea, early in

May : not unfrequently met with in spring in the close vicinity of the coast.

Hawfinch.—I have heard of two or three nests of this species found in different parts of the county this year; one at Weston, where they have been noticed for several successive summers. These birds are, from some cause, decidedly becoming residents, although till lately considered only as winter visitants.

Common Bittern.—On the 12th of June, when cruising amongst the "Broads" on the River Bure, I saw a bittern, on two occasions, rise from a large reed-bed on Hoveton Broad, which is strictly preserved. This bird had no doubt a mate close by, and had been heard "booming" on previous occasions; but it is quite twelve years since this species was last known to remain throughout the summer in Norfolk, though formerly most plentiful.

Spoonbill.—A bird of last year, with a slight crest, was shot near Yarmouth on the 10th of June.

Crossbill.—On the 15th of July, at Northrepps, near Cromer, Mr. Gurney's gamekeeper observed a flock of these birds, passing over the trees in a fir plantation, and calling as they flew. Two or three days before he had killed a red male off a fir tree near his cottage, which was in company with two or three others. As these birds, according to the late Mr. Wheelwright, nest in Sweden as early as February, with deep snow on the ground, these might be a flock of both old and young, passing southwards at the close of their breeding season.

Baillon's Crake.—The greatest novelty of this season is decidedly the occurrence of a nest of this species, at Potter Heigham, near Hickling, for the knowledge of which I am indebted to Professor Newton, to whom the particulars were communicated by Mr. W. M. Crowfoot, of Beccles. It appears that the eggs were found by a labouring man, who sold them to a lad at Yarmouth, who had been in the habit of collecting eggs for Mr. Crowfoot. He was of course ignorant as to what they were, but from their novel appearance believed them rare, and at last, after much bargaining, was induced to part with three of them. The old birds were observed, though not recognized, and the nest with four eggs was placed in a parcel of reeds, growing in water, about one foot in depth: it was very small and loosely made, composed of dry rushes. When subsequently searched for, it was found that the reeds had just been cut, and the nest therefore destroyed.

HENRY STEVENSON.

Norwich, August 20, 1866.

Ornithological Notes from the Isle of Wight.

By CAPTAIN HADFIELD.

(Continued from S. S. 345).

JULY, 1866.

Green Woodpecker, &c.—I have it on good authority that a green woodpecker was known to frequent one of our woods the whole summer through, a few years ago. My informant, an ornithologist of some experience, and well acquainted with the species, tells me that, though he did not see the bird, he heard its note repeatedly. The greater spotted woodpecker was heard at Bonchurch many years ago, by an individual well known to me: he ran home for a gun, but in the meantime the woodpecker had disappeared: from the description it must have been *Picus major*. The tapping noise was heard by another villager, though he did not see the bird. As to the great black woodpecker, though it has been included in our list, I am doubtful as to its claim to be so admitted. No one in Shanklin, that I am aware of, ever heard of its being either seen or killed. The person by whom it is said to have been shot, "in his garden," it appears, had no idea at the time what bird it was, but from his description, in *after years*, it was inferred that it could have been no other than the great black woodpecker.

Blackbird.—The pied bird, of which some account was given in the 'Zoologist' (S. S. 169), died soon after, though apparently in perfect health. However, judging from the great change in colour of the plumage that took place at the first moult, there can be little reason to doubt that after another moult the whole of the remaining white tints would have disappeared. I little anticipated that my observations on the plumage of both blackbird and swan would have been so abruptly terminated.

Martin.—6th. A gale has blown down the cone-shaped nest. I have already remarked on the inferior size and workmanship of these late nests, and here is an additional proof of their instability. They were observed to have young by the middle of the month, and there is a brood of five in one of the nests. On the 27th I watched the old birds feeding them, and think they are nearly full grown.

Swift.—17th. A large flock, numbering some hundreds, was observed this morning flying to the eastward against a strong head-

wind; they were some ten minutes or more in passing: I never remember seeing them in such numbers. The swift is by no means a common species with us, nor do they breed in the neighbourhood, though a few occasionally make their appearance in rainy and windy weather.

Turtle Dove.—Though the turtle dove has been lately seen on the Downs, I do not know that it feeds there, like the wood pigeon, on the whortleberry, but think it not unlikely. A few pairs are generally to be met with during the breeding season. A neighbour has a caged wood pigeon in perfect adult plumage, the feathers of the neck and breast resplendent with metallic tinge, and, to judge from the constant cooing, it is quite reconciled to a state of captivity.

Redbacked Shrike.—20th. A bird of this species was seen at Rew.

Common Crossbill.—23rd. A handsome male of this beautiful species was observed at Shanklin, feeding on the cones in a fir-plantation.

White Wagtail.—Has been seen about the sea-cliffs, its usual resort; and on the 24th a pair was observed by a small pond at Luccombe, but occasionally rising on wing to chase each other along the hedge-rows, on which they would alight for a second or two.

Cuckoo.—24th. The young cuckoo, though as voracious as ever, does not appear to thrive in confinement, or the growth of the species is less rapid than has been supposed. In a former note I should have said that it was of the size of a young thrush; it is now little larger than a full grown one, though the head is nearly twice the size. It has little tail as yet, but that may be partly owing to friction, consequent on close confinement in a small cage. What is chiefly remarkable in the plumage is the large white spot or transverse band on the crown of the head, correctly described by Temminck as a "grande tache blanche," whereas Macgillivray says, "on the occiput there are generally some partially white feathers." So we are to infer that the head of the young cuckoo is sometimes spotless. He remarks, "Temminck's account of the young at the time of leaving the nest is sufficiently correct;" but whether that author would have returned the compliment I think very doubtful. Considering that Macgillivray has devoted thirty-one pages to this species, it might have been expected that such a prominent feature would have been more correctly defined and described.

AUGUST, 1866.

Martin.—3rd. The first brood of martins has taken wing. 7th. The cone-shaped nest, having, as already stated, been blown down on the 6th of July, excepting a small portion of the foundation, the birds very soon set to rebuilding, but the power of retaining in the ovary the fully developed egg is certainly very wonderful. 13th. The nest is wellnigh finished, and, to strengthen it, I observe that an unusual quantity of straw and other fibrous material has been used, and is to be seen here and there protruding from the layers; whereas, in the former structure, little or none was observable. The nest damaged by the storm of the 18th of June, and subsequently repaired, has again been blown or washed down, and the young birds, four in number, were found on the 11th inst. lying dead on the ground. Judging from their size, and the length of the quills, they would probably have taken wing in the course of three or four days. It is somewhat remarkable that they should so long and perseveringly stick to a building so exposed, and where they have been subjected to such trials and disasters, so that out of the whole colony but two broods were safely reared. I know of no other species so tenacious of purpose; nothing daunts them. 21st. Martins congregating; a small flock observed to-day; birds of the season, I believe. 29th. A second brood is being reared by the owners of one of the first or perfect nests, for, with the exception of two, they are more or less open at the top or sides, so that a portion of the lining is seen.

Cuckoo.—8th. I have just heard that the young cuckoo is dead. It had been removed to a large cage, but still fed on chopped meat, though I had suggested that caterpillars, grubs and insects should be given it. This may also account for its comparative slow growth, insect-food being, perhaps, of all aliments the most nutritious; for instance, fly-eating fish are the fattest and most rapid of growth, and fly-catching birds the most muscular and powerful for their size; for example, the swallow-tribe; and insects enter into the bill-of-fare of more than one aboriginal tribe.

Bluethroated Warbler.—The adult male still frequents the brook-side, but nothing has been seen of the immature bird of late; nor have I been able to ascertain that the species is breeding here.

Pied Oystercatcher, &c.—A bird of this species was observed early in the month, but it is an uncommon bird with us; also a few sand larks, or dunlins (my informant could not say which), were seen: this

is recorded, as a *Tringa* of any kind is a *rara avis* with us since our sands have been buried by the shingle constantly drifting to the eastward. Fifty years ago none of this red shingle had reached our shores.

Great Blackbacked Gull.—17th. One was seen sailing majestically along, seemingly unimpeded by a strong head-wind. It is a noble-looking bird, whose powerful flight reminds one of the *Falconidæ*.

Willow Wren.—A few have been lately observed, and on the 19th one was seen in the garden.

Wood Wren.—A fine male of this species having been shot on the 21st the wing was compared with the outline engraving of Macgillivray's, with which it exactly corresponds in shape. The relative length of the primaries is also correctly given. The second primary was then compared with the woodcut outline in the '*Zoologist*,' (S. S. 300), from which it differs materially in shape. In my specimen the outer web *abruptly* narrows at one inch from the tip, whereas in the woodcut it tapers gradually to the end. The former is arched and *decurved* at the tip; the latter, though slightly arched in the centre, is recurved at the end. The quill of the bird before me tapers towards the extremity, the inner web being slightly cut out and diagonally sloped, but in the woodcut the lower web is curved and rounded off. Woodcut No 1 is more like the *third* than the second primary of my specimen. On comparing the bird with Temminck's coloured lithographic engraving, the resemblance, both as regards shape and colour, was found perfect, so that, with it and Macgillivray's work to refer to, there is no mistaking the species. This fine adult male is five inches and five-twentieths of an inch in length, bill included, and nine inches in extent of wings. The throat and sides of the neck still of a bright yellow, that colour extending under the wings and beyond the flexure; breast and belly white, but the former is slightly tinged with yellow, as are the sides. A bright yellow band from the base of the upper mandible passes over the eye and ear-coverts. Head, back and tail-coverts yellowish green; tail-feathers, excepting the exterior one, broadly margined with yellowish green. The primaries, the exterior one excepted, margined with greenish yellow; secondaries the same, but more broadly. The second primary is the longest; the third three-twentieths of an inch shorter than the second; the first one-tenth less than the third. Thigh tinged with yellow. On opening the gizzard it was found, like that of the meadow pipit described in the '*Zoologist*' (S. S. 342), to contain nothing but the remains of small

black beetles, though we are told that its food is “*les mouches et autres petits insectes volans.*” This bird was shot while flitting among the upper branches of a lofty elm, where it appeared to be in quest of insects, but whether the beetles were found there I am not prepared to say, though I think it probable, for the wood wren rarely seeks its food on the ground, though it may occasionally be seen alighting among the decaying leaves for a second or two. The wood wren has but lately returned to our plantations and gardens.

Swan.—27th. A swan having been shot to-day near Mill Bay, I am inclined to believe it to be the bird that escaped on the 20th of April from the Bonchurch Pond, as it is in very poor condition, indeed little more than skin and bone, and the tail-feathers much worn and abraded, some having the shaft almost bare of web, and the rest are in a ragged state, which would not be the case if recently escaped,—besides, it was found very wild. I little anticipated having this opportunity of carrying out my observations, or of ascertaining when it arrived at maturity. Though I had shown that authors err in saying that the swan is mature when it has acquired the pure white plumage, still I had failed in ascertaining when it becomes a perfect adult, *i. e.* has the bill of a bright reddish orange colour, such as I now find it, six months or more after attaining the pure white plumage. It measures about four feet ten inches in length, and seven feet in extent of wings. The moult of the old swan, commenced towards the middle of July, was not completed till late in August.

Wheatear.—31st. An unusual number seen to-day; they are apparently gathering on the southern coast for the autumnal migration.

Robin.—This species is now returning to our gardens in and around the town.

HENRY HADFIELD.

Ventnor, Isle of Wight, September 4, 1866.

Errata.—Page 338, line 34, for “sometimes,” read “somewhat.” Page 343, line 28, for “heard,” read “hard.” Page 344, line 31, for “build,” read “to build.”

List of Birds observed during a Six Weeks' Summer Visit to the Channel Islands, exclusive of Jersey. By CECIL SMITH, Esq.

Kestrel.—I found kestrels breeding in considerable numbers in all the Islands that I visited, and by no means restricted to the

Islands of Guernsey and Sark, as they are marked by Professor Ansted, in his List of the Birds of the Channel Islands. They are far more numerous than any other hawk; indeed, except the sparrowhawk, the only hawk I have seen in the Islands.

Sparrowhawk.—Not nearly so common as the last.

Spotted Flycatcher.—Not quite so common as in England.

Missel Thrush.—A few in Guernsey and Sark. I have not observed it in either of the other Islands.

Song Thrush and Blackbird.—Tolerably common in all the Islands.

Hedgesparrow.—Not very common.

Robin.—Much more common than the last.

Stonechat, Whinchat and Wheatear.—All these three are very common in all the Islands, the whinchat perhaps the least so, and the stonechat certainly by far the most numerous of the three, as it may be seen on almost every hedge, bush and wall. These three are by no means confined to the Islands of Guernsey and Sark, but are at least equally common in Alderney, Jettro and Herm.

Blackcap.—Though called the Guernsey nightingale, I have not found this bird very common, only having seen two or three specimens during my visit.

Chiffchaff.—I saw one specimen in Sark.

Wren.—Tolerably common in all the Islands.

Great Tit and Blue Tit.—The only species of tit I have been able to find, and these not very common.

Pied Wagtail.—Tolerably common.

Gray Wagtail.—Not so common as the last.

Tree Pipit.—Not very common.

Meadow Pipit.—Much more common than the last.

Rock Pipit.—By far the most common of the pipits, equally so in all the Islands, and by no means confined to Guernsey.

Sky Lark.—Very common indeed in all the Islands, the smallest and dullest of which are constantly enlivened by the song of these birds.

Yellowhammer.—Not very common, though I have found a few both in Alderney and Herm, as well as in Guernsey and Sark.

Chaffinch.—Common, though not so much so as in England.

House Sparrow.—Very common everywhere.

Greenfinch.—Rather common, more so than the chaffinch.

Goldfinch.—Rather rare; I believe it used to be common, but

it is now so sought after by birdcatchers that it has become very scarce.

Common Linnet.—The common bird of the Islands, and equally so in all of them. Here again, as in so many other cases, Professor Ansted has made the mistake of marking this bird in his list as only to be found in Guernsey and Sark, whereas it is equally common in the other Islands.

Common Crossbill.—I saw one of these birds in the red plumage during an expedition to Sark on the 25th of June; it was feeding on a large fir-cone in the garden of Mr. Collins, the Lord of Sark; it was very tame, and allowed me to approach quite close. On my return to Guernsey I was asked by a birdcatcher there what some birds were which had been brought to him, and which he described as being some green and some red, and like parrots: having seen the crossbill in Sark the day before, I thought they were probably crossbills, and asked him to get me some specimens: in a day or two he brought me two birds dead and one alive; the dead ones were one in the green and one in the red plumage; the live one is a darker green than the others, and I should think a young bird of the year. I brought it safely home; it is now (August 20th) alive and well in my aviary, where I hope it will live and flourish, as I am very anxious to watch it through the different changes of plumage. Is it not unusual to find these birds so far south as the Channel Islands so early in the year as the 25th of June? They evidently are not very common there, as they were not known to the birdcatcher or to the person who shot them.

Chough.—Not at all uncommon in Guernsey, where, indeed, they are more numerous than jackdaws. At Herm, on the other hand, the jackdaws predominate: I also saw some in Alderney and Sark.

Raven.—I saw two ravens in Guernsey, near the south end of the Island.

Crow.—Not uncommon in any of the Islands.

Jackdaw.—Tolerably common about the cliffs in all the Islands, especially Jettro and Herm.

Magpie.—I have seen a few of these birds in both Guernsey and Sark.

Wryneck.—Very common in Guernsey. I have not myself been able to find it in either of the other Islands.

Common Creeper.—Not at all common, though I expected it must

be there, and was consequently on the look out for it all the time : I only saw one specimen, and that in Guernsey, the day before I left.

Hoopoe.—Had one brought me, in the flesh, from Alderney, on a former visit ; it is now in my collection. I believe, however, this bird has frequently been met with in Guernsey and Alderney.

Cuckoo.—Very common in all the Islands.

Kingfisher.—I have seen several kingfishers amongst the wild rocks on the northern shore of Guernsey. One also used to frequent a small pond in the garden of the friend with whom I was staying.

Swallow.—Common everywhere.

Martin.—Not so common as the last.

Swift.—A few swifts breed in the highest rocks of each of the Islands. They appear to me to be rather less common in Guernsey than in either of the other Islands.

Wood Pigeon.—I have seen a few wood pigeons in Guernsey ; none in the other Islands.

Turtle Dove.—Shot one near Vozon Bay, Guernsey ; the only one I saw.

Little Bustard.—Though I have not been able to find one of these birds myself, I believe I may include it in my list, as I had a letter from my brother-in-law, dated Guernsey, March 5th, 1866, in which he said, "A bustard has been shot here by a Guernsey farmer." There is also one in the Museum, said to have been killed in Guernsey last year, now much moth-eaten.

Ring Dotterel.—Generally very common, though on the first two or three weeks after my arrival this time, I found the ring dotterel excessively scarce, even on parts of the coast where, on other visits, I had found them very numerous : towards the middle of July, however, they began to frequent their usual haunts in small parties of six or seven, most probably the old birds with their young : these parties very soon increased in number to twenty or thirty, and before my departure, on the last day of July, they mustered quite as thick as I had ever seen them before.

Kentish Plover.—I shot two Kentish plovers, a male and female, on the 2nd of July, at one of the bays near the Vale Church, Guernsey. I also saw a pair in Alderney, in company with some ring dotterel.

Gray Plover.—Have seen a few on other visits to Guernsey, but never succeeded in obtaining a specimen, as they were always excessively wild.

Turnstone.—Not very uncommon. They began to make their appearance a little after the ring dotterel, and generally mixed with them. I shot one for my collection, in full summer plumage, on the 30th of July. I have observed turnstones in Herm, as well as in Guernsey, but not in any of the other Islands.

Sanderling.—Shot one in Vozon Bay, Guernsey, on a former visit, a little later in the year.

Oystercatcher.—Very numerous in all the Islands.

Curlew and Whimbrel.—Saw a few of both these birds, but they were excessively wild.

Green Sandpiper.—Not very common; saw a few in the bays to the north and west of the Island.

Common Sandpiper.—Same observations as the last.

Bartailed Godwit.—Not very common; shot one at Herm, a young bird of the year, on a former visit, about a month later; indeed I think this bird made part of my 1st of September bag.

Purre or Dunlin.—There are a good many of these birds about with the ring dotterel, but they are not nearly so numerous.

Landrail.—I heard the landrail, in Guernsey, Alderney and Sark.

Common Guillemot.—Numerous at times; saw a few at Alderney, where they probably breed.

Puffin.—There were great quantities about Alderney and Herm, in both of which Islands, as well as the wild uninhabited rocks around, they breed in immense numbers. Going through the Swinge, in the steamer, a narrow passage between Alderney and a little island called Burhoo, we passed a great flock of these birds; in fact, for more than a mile both air and water were swarming with them.

Razorbill.—Not nearly so numerous as the puffins, but a good many breed both in Alderney and Herm.

Shag.—Shags breed in considerable quantities in all the Islands, though the Farrier Rocks, one of their chief breeding stations, is getting rather too hot to hold them, the Artillery stationed at the Fort in Guernsey having chosen one of those rocks for a target for their Armstrong gun: one of the officers told me he was watching the practice with his glass, and saw a shell burst exactly over a rock which was nearly covered with shags, a great number of which fell victims to the shot.

Gannet.—Saw one, a young bird, fly over the steamer when on the passage from Guernsey to Alderney.

Kittiwake.—Breeds in some numbers in Guernsey, Alderney and Sark.

Common Gull.—Not very common.

Herring Gull.—The common gull of the Channel Islands. Breeds in great numbers in Guernsey, Sark and Alderney, and a few at Jettro and Herm. I caught three young ones on the rocks at Sark, and brought them home; they are now very tame and always hungry.

Lesser Blackbacked Gull.—Not very common; I saw a few at each of the breeding stations of the herring gull. I shot one of these birds on the 17th of July, in a transition state, of which the following is a description:—Beak generally dark horn-colour, with occasional patches of yellow, and two small patches of red on the angle of the lower mandible. Head, neck and breast dirty white, with a few small streaks of brown on the nape. Back generally black, almost the same colour as the mature bird. Scapulars the same. Lesser wing-coverts dusky, almost black and light brown, making two bands on one wing; on the other the bands are by no means so distinct, the dark and light feathers being more muddled together. Great coverts nearly the same, forming a dark and light band on each wing. Quills dark dusky, almost black. Secondaries the same, with white tips, and edges very much worn. Tertiaries dark dusky, with white tips. Tail-coverts and tail white, except the second and third feathers on each side of the tail, which are more or less speckled with brown, especially on the inner web; the tips of these four feathers are dark brown, edged with white. The eye, I think, was yellow; but I am sorry to say I forgot to make a note of it at the time. This bird is evidently in a state of moult, the lighter feathers on the body and wings being very much rubbed, and indeed worn quite ragged; the darker, on the other hand, appears more perfect. The specimen, on the whole, is rather an ugly one, but interesting as showing the change of plumage.

Great Blackbacked Gull.—Not nearly so numerous as the last. I have occasionally seen one on the sands of Vozon Bay, Guernsey, and also on the sandy beach to the northward of Herm.

These are all the birds I have been able to observe myself, but my visits to the Channel Islands having always been in the summer, of course the list is very short of including all the birds. There is a tolerably good Museum in St. Peter's Port, Guernsey, but it is now unfortunately much neglected, many of the best specimens being moth-

eaten to such an extent as to be scarcely recognizable; moreover, though professing to be a collection of birds killed in the Islands, it is hardly to be depended upon as such, as I am told many of the specimens were old skins collected by a Jersey birdstuffer, and sent over by him when he left, without any information as to whether they had been killed in these Islands or in France. This Museum I imagine to have been the foundation of Professor Ansted's List of the Birds of the Channel Islands.

CECIL SMITH.

Bishop's Lydeard, August 20, 1866.

"Occasional and Accidental Visitors."—I have long intended making a few remarks on the introduction into local lists of species which have no real claim to be considered true natives of the country in question, and I am induced now to do so by the allusion to the subject in the Preface to your 'Dictionary of British Birds.' Every true naturalist cannot but have felt the incongruity of such birds as the swallowtailed kite, the redwinged starling, or the spinetailed swallow, being mixed up in our ornithological works and collections with sparrows, crows, chaffinches, and other mere vulgar birds. As you well observe, in the Preface to your 'Dictionary of British Birds,' the time has come for reform. Now that the geographical distribution of species, the existence of local races, the theory of "centres of creation," and the influence of climate and food, are being studied on scientific principles, the days for swelling out lists of "British" birds with such quasi-natives is surely past. The custom savours more of the dealer and mere collector than of the true and earnest inquirer into Nature, and had it not unfortunately been sanctioned by such men as Montagu, Selby and Yarrell, it could scarcely have survived so long as it has. But, on the other hand, is it desirable, even if it were possible, totally to discard these illustrious strangers, to preserve no memento of their visits, to give no clue to the identification of other wanderers of the same kind? Are we totally to ignore the occurrence in Britain of many most beautiful and interesting species, and to cast them into outer darkness as aliens and interlopers? Surely not. Some of them, even when attention is called to them, may prove to be really natives, although rare, as witness the case of the black redstart, of Savi's warbler, and of the great sedge warbler. Had the first capture of these species not been recorded and the specimens carefully described, the discovery of their more frequent occurrence and of their breeding in those isles might have been indefinitely postponed. Evidently, then, what is wanted is some middle course, which would keep these wanderers from swamping the true natives in our catalogues and collections, and yet preserve due memory of their advent. What this course may be, it lies with our ornithologists to decide; but I would, with all deference, suggest that in systematically arranged faunas, lists and collections, the accidental visitors should always be kept in a *separate and supplementary series*, while the indigenous species are given their due precedence. This is done in the list at the end of Dr. Bree's excellent work on 'The Birds of Europe,' and it seems to me that the example should be universally followed. Thus our true Fauna would be shown in its due proportions: "the truth, the whole

truth, and nothing but the truth" would be told, and yet those (and they are many) who confine their attention to British species would not be deprived of information as to those often interesting natives of other climes who may be wafted by adverse winds, or driven by some other strange chance, to those inhospitable shores.—*Edward R. Alston*; 205, *Bath Street, Glasgow, September 4, 1866.*

Albinos.—Since my last account of albinos I have added to my collection and seen many more curious instances of real or part albinos. Of the blackbird I have seen several pied varieties, and one beautiful cream-coloured and white female (still distinguishable by her rust-coloured breast), cream-coloured thrushes, a cream-coloured magpie, a half white stonechat (in my collection), a shag with a white crest (a very striking thing), and a perfect albino curlew, the eyes and bill being even pink; this bird is in my collection. A friend informs me that he has for me a perfect albino of the common sandpiper, with pink eyes and bill. Of the last two birds I never knew albinos before. A corn crake also in peculiar plumage is worth recording: the top of the head, the neck, back, rump and scapulars rust-colour, edged with yellowish gray; wing-coverts and the sides red, barred with white; wing-quills of an uniform brick-red; breast cream-colour; sides of the head slightly tinged with blue; eyes pink; feet and bill rich flesh-colour. A marsh harrier containing many white feathers. Two or three pied chaffinches, a pied wren and a cream-coloured swallow. Real albinos invariably remain white; this is nothing unusual. Many examples are to be met with even in the human species. White feathers caused by disease will undoubtedly in the following moult, if a healthy one, assume the true colour, but natural white feathers never change.—*H. Blake-Knox*; *Dalkey, Co. Dublin, August 29, 1866.*

Food of the Hobby.—In the stomach of an immature male of this species, killed on the 26th of June last, at Langley, in Norfolk, I discovered nearly the whole of the remains of a gray linnet, two examples of the ghost swift moth, a large dragonfly and several small beetles: the wings of the dragonfly were taken off close to the body; the moths and beetles were swallowed whole.—*T. E. Gunn*; 3, *West Pottergate, Norwich.*

Black Redstart in the North of Ireland.—An old male example of this bird is to be seen at Mr. Sheals', birdstuffer, Belfast. I forget from whence it came, but he got it in the flesh.—*H. Blake-Knox*; *Dalkey, Co. Dublin, August 29, 1866.*

Late Song of the Nightingale.—Mr. Hayward, a perfectly reliable naturalist of this town, informs me that on Thursday, August 9th, whilst entomologizing in the early morning, he heard the full song of the nightingale in the wooded part of a park about a mile from Colchester. He saw the bird, and a friend passing the road at the time also heard the song. I have watched the habit of the nightingale for many years, but I never heard it sing in the wild state in August. As a rule, the song is first heard in the eastern counties the second week in April—often on the 11th or 12th. It lasts during the wooing, nest-building, egg-laying and incubation, but invariably stops when the young are hatched, the last week in May, or thereabouts. Of course the bird heard by Mr. Hayward may have been a disappointed lover sending forth its rich mellow notes of reproach before it flew away to softer climes; or it may have been an escaped prisoner from some wretched cage in which it had been shut up, sending forth its notes of triumph, just to hear how it would sound in the wild echoing grove. In any case the fact is worth recording, for, however simple, in Natural History a fact is worth many thoughts.—*C. R. Bree*; *Colchester, August 11, 1866.*—*From the 'Field.'*

The Common Starling: adoption of Cornwall as a breeding locality.—The starling, up to within a few years, withdrew entirely from Cornwall in February and March, and was never known to breed with us. This was not the case in most of the other southern counties, although I believe the bulk retired to the north, returning to the south and west at an early period in the autumn in enormous flocks, roosting at night in sedgy morasses, fir-plantations, ozier-beds, &c. I first heard of their adopting our county in the summer some years since from my brother, who lives in the eastern part of the county, when he wrote me word that a few pairs of starlings had in that and the few previous years bred in the hollow trees about his residence. Last year I received a letter announcing that they had reached the Bodmin country (the central district of Cornwall), and this week I received a communication from Mr. A. Chenhalls, who lives in the Land's End district, calling my attention to the autumnal flocks of starlings having made their appearance at least three weeks before the usual time. Whether we shall have the same honour and compliment paid us by nightingales remains to be proved; but these changes of residence are curious in the absence of any apparent reason for the change.—*Edward Hearle Rodd; Penzance, September 17, 1866.*

A Rook at Sea.—Hooded crows are very numerous, and frequently perch on our yards, attracted by the meat lashed to the masts. There are no rooks on the island (Shetland), there being no trees for their accommodation, but I noticed a lot of starlings and a mountain finch. Speaking of rooks reminds me of an account Captain Gravil gave me of one which came on board utterly exhausted, in the Greenland Sea or North German Ocean, two hundred miles from the nearest point of land, viz. the North of Scotland. This poor rook (he is certain as to the species) alighted on the yards, and was caught, confined and fed; and after a few days liberated, with full permission to depart in peace; but, strange to say, this usually shy bird chose to remain on board, running about the decks and amongst the men, and feeding sumptuously on potatoes and scraps, and roosting at night in the rigging. Arriving at Shetland, Captain Gravil sent the bird on shore, and sailed in the evening for Hull; but imagine his surprise and that of his crew, many of whom are now on board, when next morning, about breakfast time, they descried their late shipmate winging his way to the vessel (then more than forty miles from Lerwick, and out of sight of land), on which he alighted with a prodigious cawing and every token of satisfaction, and renewing his old habits and intimacy with all on board. This continued voluntarily on the rook's part until the vessel arrived in Hull, when he was put in a cage that he might be conveyed to Captain Gravil's garden, but unfortunately the boys, who always swarm on a whaler's deck directly she returns to port, got at him and poked him to death with sticks, to the regret and annoyance of all the ship's company.—*C. E. Smith; S.S. 'Diana,' Lerwick.*

White Swallows.—I am on a stay at Llandrindrod Wells, Radnorshire, for the benefit of my health. In taking a drive through Horney, a village two miles distant from here, I observed a white swallow flying about with others. On my return I procured a gun, and was fortunate enough to again find the bird, which I brought down with its feathers uninjured. On examining it I found it perfectly white, except a dusky cream badge on the back. There were some boys present when I shot the bird; they informed me that there were several bred at a farm-house in the neighbourhood. I went and saw the farmer this morning, who informed me that there was a nest of

three, all white ones, and that he saw them previously to their flying. He also says that about four years ago there were two in the same neighbourhood, and both shot. Is not this a very unusual occurrence? I have been a sportsman upwards of twenty years, and never saw anything of the kind before.—*C. Watkins; Holmen Park, Hereford.—From the 'Field.'*

Whitebellied Swift in the Western Islands of Mayo.—Mr. Thomas Cullen, sub-curator of Trinity College, Dublin, while on a dredging tour with Professor Wright, on the West Coast of Ireland, informs me that he saw several of this supposed alpine swift in the vicinity of Achill Island. This was in July last, so that they must breed there.—*H. Blake-Knox; Dalkey, Co. Dublin, August 29, 1866.*

Swift in September.—You will no doubt be interested in the fact that I saw, on the 3rd of September, a swift sailing about, as if it was the middle of August, though without any companions. I watched it for some time, and had a perfectly clear view of it. On looking into 'Selborne,' I find that "a swift was once seen at Lyndon on September 3rd." It is curious that my day of observation should be the same; and the fact itself is the more remarkable in this northern part of England, and in a district where swifts are scarce even in the height of summer. It was just on the outskirts of the village: the weather was fine on Monday, but has since been unfavourable, else I should have looked again.—*J. Gilbert White; Beccford, Hull, September 5, 1866.* [Communicated by Thomas Bell, Esq., F.R.S., &c.]

Destructiveness of the Wood Pigeon.—In addition to "turnip tops, holly-berries, rowans, hips, haws, charlock (seeds, leaves and flowers)," may be added grain of all descriptions. From the time of the young grain hardening in the ear to the time of its harvesting, and from the time of its being sown to getting into the blade, they prey upon it, and do immense harm to it. Last harvest I saw one shot, the crop of which contained half a pint of tares; and the Duke of Richmond's gamekeeper shot one, the crop of which contained 858 grains of barley. Some time ago I saw one opened, that was said to have visited a field seven times one day before it was shot, and in the crop there was an imperial half pint of wheat. They are particularly injurious to peas and beans, both newly sown and when ripening. In winter they attack the clover plants, pecking out the centre buds, and they do the same to turnips, frequently pecking the bulbs also, which, thus injured, are very liable to be destroyed by frost. In this neighbourhood they are found in great flocks, and although a very shy bird, and bad to get at, above a hundred are frequently shot in a day, and readily sold at York for six-pence each. Considering the quantity one bird can and does destroy, and the great number of them, it will readily be conceded that they must be a great nuisance.—*John Ranson; York.*

Food of the Wood Pigeon.—I am glad to give my opinion as to the totally harmless character of that beautiful bird, the wood pigeon: in hard weather they come into our gardens and eat the winter greens, and in the fields they eat the turnip-tops, and there is no bird that does less mischief to the farmer. I am very glad you have invited opinions on this subject, as a very strong prejudice prevails throughout this county [Surrey] against this bird.—*James Paine; near Godalming, September 1, 1866.*

[I rather invited the record of facts than opinions: an opinion, as instanced in both the preceding communications, is biased by prejudices. Mr. Ranson considers the wood pigeon a "great nuisance"; Mr. Paine calls it "totally harmless": again, I prefer to avoid all reference to gamekeepers' views of Natural History questions; the

barn owls, cuckoos and goatsuckers that adorn the trunks of trees in all "preserved" domains, exhibit very decidedly the gamekeeper's ignorance.—*Edward Newman.*]

Temminck's Stint at King's Lynn.—Two specimens of *Tringa Temminckii* were shot near this place on the 12th of this month, by Mr. George Cresswell. They were both females, and much damaged, but I shall be able to have one of them preserved for our Museum.—*John Lowe ; King's Lynn, September 16, 1866.*

The Buffbreasted Sandpiper in Belfast.—Whilst visiting one of my birdstuffers in Belfast, I had the pleasure of being shown by him (Mr. Sheals) a strange sandpiper, which I instantly recognized as the buffbreasted sandpiper (*Tringa rufescens*), in its first plumage. It was shot by Mr. Joyce, of that town, in company with another too much injured for stuffing, in the People's Park. On writing to Mr. Joyce for full particulars, he kindly wrote me the following:—"I shot it early one morning in the beginning of October, flying from seaward in company with another, in a piece of reclaimed slob land called the People's Park, beside the town. They flew different from any of the sand lark species I have seen, and as I thought, perhaps, they were some rare bird, I fired at one of them as they flew past me, and killed it; the other flew on, and then, as if missing its companion, turned and flew close past me; I fired at it, and, as I had No. 1 shot in the left barrel, I blew it almost to atoms. I then went up and lifted the first one, and as I had never seen one before I considered it rare, and went back and lifted the other one, but I was compelled to throw it away; it was minus the head and one leg, and the breast torn open. * * * * I should have mentioned that it was about the beginning of October, 1864; I may be a few weeks astray, but that is as near it as I can get."—*H. Blake-Knox.*

Wood Sandpiper at Kingsbury Reservoir.—On the 30th of August, when at the above Reservoir, I shot a nice specimen of this elegant sandpiper: it was alone, and rather wary, but it having settled under a high bank I was enabled to approach within shooting distance. When on the wing its resemblance to the green sandpiper was very remarkable, but when walking it showed a much more "stilted" appearance, and by this and its note I suspected what it was.—*F. D. Power ; 32, Queen Square, W.C., September 3, 1866.*

Night Heron at Belfast.—I have just seen an Irish specimen of the night heron, which was got, wounded, in the People's Park, near about the place where I got the buffbreasted sandpiper, in September, 1865 (?). It is either a female or the young bird. It agrees with the description given in Yarrell.—*Richard Joyce ; Belfast.* [Communicated by Mr. Blake-Knox.]

Lacerta viridis in Kent.—A lizard was brought to me about three weeks ago, which had been taken on a railway embankment in the neighbourhood: it is about eight inches in length. The ground colour of the whole body, head and legs, a bright green, dotted with black, and inclining to yellow on the back. A dark brown interrupted dorsal line extends along the whole length of the body and tail. It was moulting when brought to me, and the old skin is still upon the tail, which is now of a dull drab colour. It has fed freely on Noctuæ, such as *Triphæna orbona*, *Noctua triangulum*, &c., but refuses to eat the larger Bombyces, as well as *Zygæna Filipendulæ*. It generally eats from two to three Noctuæ nightly. Is this a continental species or one which has established itself here? It seems to resemble the common green lizard

of the Mediterranean districts.—*W. O. Hammond; St. Alban's Court, near Wingham, August 7, 1866.* [I have no doubt the lizard is *Lacerta viridis*.—*Edward Newman.*]

Pupa (Vertigo) minutissima at Ventnor.—I lately took two specimens of this comparatively rare shell under Steephill, near Ventnor.—*C. Ashford; Grove House, Tottenham.*

Barnacle in a Composite Candle.—A common composite candle has just been brought to me which was picked up on the beach here. It is apparently in a perfect state, but in fact a full-grown barnacle has eaten its way into it from its lower end to a depth of about two and a half inches. It apparently fills the inside of this part without disturbing the outside at all: the shells of the barnacle with something less than a quarter of an inch of its body hanging free from the bottom of the candle. It has forced its way into the candle with so much skill (entering apparently by the wick) that it has not in the least degree disturbed the bottom of it. At present it is deposited in our Museum here, but I fear we shall not be able to preserve it. I am unable to say how much of the interior diameter of the candle is occupied by the barnacle.—*Thomas Cornish.*

Xantho florida and X. rivulosa at Penzance.—I captured to-day *Xantho florida* and *X. rivulosa*. They were taken in the same net, in about seven fathoms water.—*Thomas Cornish; Penzance, September 8, 1866.*

Spider or Mouse.—In reply to the bat hypothesis propounded in the communications of Mr. Doubleday and Mr. Newman, in the last number of the 'Zoologist' (S. S. 386), I would remind those gentlemen that the deposit of wings seen by me at Looe consisted "chiefly of butterflies' wings, with a few moths'." It may be presumptuous in me, in opposition to two such great authorities, to say that I think this fact alone, unless they can prove that bats feed on *butterflies*, does away with their hypothesis, as far as my case is concerned, the *few moths'* wings also proving that spiders feed on moths, and I am certain that bats could not get into this house where the deposit was, there being but one opening, the doorway, the door being always closed at night. Then, again, the fact of spiders' webs being found near the deposit in the cave at Ikley, the building at Leominster, and the small house at Looe, point to the truth of the spider hypothesis. As to the grotto at Stamford River Hall, Mr. Doubleday does not inform us whether there was a spider's web there; but where a more likely place than a secluded grotto for such a structure? Mr. Birchall distinctly informs us that there were no traces of bats in the cave at Ikley; then surely the deposit of bats' excrement at Leominster cannot be taken as proof that bats caused the deposit in the cave at Ikley. I destroy the spider's web at Looe, and all further deposit of wings ceases. Mr. Newman clears the landing and steps in the building at Leominster, but leaves the spider's webs intact on the walls; the deposit of wings continue: without the spiders' webs on the walls being destroyed, to say the least of it, this evidence in favour of the bat hypothesis is very far from satisfactory. Miss Dix sees bats frequently flying in and out of a grotto at Stamford Rivers Hall, and has "no

doubt whatever that they carried the moths there to eat them;" from which Mr. Doubleday is convinced that bats caused the deposit of wings in the cave at Ilkley; Mr. Birchall, having caught a mouse in the cave at Ilkley, was and is, for what I know to the contrary, convinced that mice caused the deposit there—evidence much on a par. Would not the wings found under the trees at Ongar Park, and those found on water under salallows, tend rather to prove that bats eat the moths and drop the wings where they catch them than that they carry the moths into caves, grottos or buildings, to eat them there? Having considered the above facts, more particularly the fact that the deposit of wings at Looe was chiefly butterflies' wings, I must still think I have good grounds for supposing my hypothesis is not altogether wrong; but if either Mr. Doubleday or Mr. Newman can clearly prove that bats are in the habit of preying on butterflies (where, I believe, will arise their great difficulty), I shall then most readily withdraw my hypothesis as being no longer tenable. I think the following fact may throw some light on the subject. On the 10th of August last I found, *by the roadside*, a spider's web, in which were a set of wings of the little white cabbage butterfly: the wings were cut off close to the body and perfect, precisely similar to those already described by me in former communications; the web was placed so that the wings could not possibly have fallen into it. This I take to be further proof that spiders do clip off the wings of butterflies and moths, as I have before suggested, and I believe, from the form of a bat's mouth and the nature of their teeth, it would be impossible for them to catch a moth and eat it without leaving on the wings some traces of their work.—*Stephen Clogg; Looe, September 10, 1866.*

[Perhaps it will be well for me to say at once that I have no intention of continuing the controversy: I have convinced myself, and must allow others to do the same. Should my correspondents incline to prolong the discussion, may I ask them to confine themselves as much as possible to facts; they will outlive opinions.—*Edward Newman.*]

PROCEEDINGS OF SOCIETIES.

ENTOMOLOGICAL SOCIETY.

September 3, 1866.—Sir JOHN LUBBOCK, Bart., President, in the chair.

A special vote of thanks to the President was passed by acclamation, in acknowledgment of the hospitable reception given to the Members of the Society at High Elms, on the 11th ult.

Additions to the Library.

The following donations were announced, and thanks voted to the donors:—
 'Transactions of the Zoological Society of London,' Vol. v. Part 5; 'Proceedings of the Zoological Society of London,' 1865; presented by the Society. 'Bulletins de l'Académie Royale des Sciences, des Lettres et des Beaux-Arts de Bruxelles,' 2nd series, Vols. xx., xxi.; by the Academy. 'Annals of the Lyceum of Natural History of New York,' Vol. viii. Nos. 4—10; by the Lyceum. 'Proceedings of the Boston Society of Natural History,' vol. x.; by the Society. 'The Journal of Entomology,' Vol. ii. No. 14; by the Proprietors. 'The Zoologist' for September; by the Editor. 'The Entomologist's Monthly Magazine' for September; by the Editors.

The following additions by purchase were also announced:—‘*Revue Zoologique*,’ 11 vols.; Laporte & Gory, ‘*Histoire Naturelle et Iconographie des Insectes Coléoptères*,’ 4 vols.; J. Thomson, ‘*Essai d’une Classification de la Famille des Cérambycides*,’ J. Thomson, ‘*Systema Cerambycidarum*,’ Trimen, ‘*Rhopalocera Africae Australis*,’ Part 2.

Election of Member.

M. A. Depuiset, of No. 17, Rue des Saints Pères, Paris, was balloted for and elected a Foreign Member.

Exhibitions, &c.

Mr. Bond exhibited a male specimen of *Bombyx Cynthia* which measured $6\frac{1}{4}$ inches in expanse of wings: those reared by Dr. Wallace at Colchester, during the present year, varied from 3— $6\frac{1}{2}$ inches; they also showed some variations in the quantity of white hair or down upon their bodies, some having small tufts only of that colour, others having bands, whilst in a few specimens almost the entire surface was white.

The Secretary had been requested by Dr. Wallace to say that during September his Ailanthery would be worth looking at, and he would be very glad to show it if a day’s previous notice were given him. The season had been very unfavourable; long continued rain and wind made great havoc, and a severe hail-storm which happened early in August riddled the Ailanthus leaves, and knocked down the worms, of which many were killed. Nevertheless there would be a crop; his first cocoons were begun on the 18th of August; and he had a second smaller supply of younger larvæ to supply the vacancies caused by the previous inclemency of the weather.

Mr. S. Stevens had recently visited Lady Dorothy Nevill’s Ailanthery, where also many larvæ had been blown off the trees by the wind, and it was necessary to employ a man or boy to replace them on the leaves. Birds, however, were seldom found to attack the larvæ.

Prof. Westwood said that wasps carried off the newly-hatched larvæ. He might mention also that a correspondent of his had had a few larvæ in-doors, but two of them escaped; after a time both were found upon the single Ailanthus which was growing in the garden.

Mr. Pascoe directed attention to an account given by Mr. Consul Meadows, and published in a recent number of ‘*The Times*,’ of a Chinese silk-worm, the pupa of which was used as an article of food.

Prof. Brayley communicated the following extract from the Report of Mr. Vice-Consul Lay on the Trade of the Port of Che-foo in Northern China, recently presented to Parliament:—

“Amongst the articles that can be exported from Che-foo, there is brown silk produced from the wild silkworms that swarm in the mountain forests, and the quantity of this article that could be brought into the market, if prices suited, may be computed at not less than 12,000 bales a-year. This silk is of different qualities, according to the process and care adopted in reeling it from the cocoons, and some of it is well adapted for manufactures. The natives weave plain silk goods from it called ‘pongees,’ and about 100,000 pieces of these stuffs could be bought annually.”

Mr. A. F. Sheppard exhibited a box of Lepidoptera, all bred or captured in the

Isle of Man by Mr. Gregson, and including *Dianthæcia cæsia*, *D. capsophila*, *Sesia philanthiformis*, *Sericoris littorana*, *Eupæcilia albicapitana*, *Sciaphila Colquhounana*, *Gelechia vicinella* and *G. leucomelanella* (which Mr. Gregson believed to be but one species), a new species of *Gelechia*, and the new *Phycis*, allied to *P. dilutella*, of which Mr. Bond exhibited a specimen at the July Meeting (Zool. S. S. 323.)

Mr. Stainton exhibited *Gelechia vicinella*, which had been bred by Mr. Gregson from larvæ collected in the Isle of Man, feeding on *Silene maritima* and *Gelechia atrella*, which had been bred by Mr. Jeffrey from larvæ collected near Saffron Walden, feeding in the stems of *Hypericum*. The first-named species belonged to the group of which the larvæ are all attached to plants of the natural order Caryophyllaceæ, but *Gelechia atrella* had always been supposed to belong to the group of species attached to plants of the natural order Leguminosæ, and its occurrence on *Hypericum* was so startling that Mr. Stainton had at first suspected some error of observation; however, Mr. Jeffrey's statements were positive and conclusive, that he had bred fourteen specimens in three different receptacles, one of which had not been previously used for larvæ, and that he had not collected any larvæ feeding on Leguminosæ before the first imago of *G. atrella* had appeared. The habit of the larva was, moreover, very peculiar; it burrowed in the stems of the *Hypericum* early in May, and thereby caused the upper shoots of the plant to droop, which had led to its discovery.

Mr. Stainton also exhibited a series of Micro-Lepidoptera received from M. Millière, of Lyon; amongst which were specimens of the *Depressaria Rutana* of Fabricius (a species which had been lost sight of for many years), bred from *Ruta angustifolia*, at Cannes, and of a new species of *Gelechia* nearly allied to *G. costella*, which had been bred from *Hyoscyamus albus*, at Cannes. Mr. Stainton remarked that our common *G. costella* was hardly known on the Continent; he had never seen a specimen in Germany: indeed the only Continental example he had seen was from Holland; yet the food-plant, *Solanum dulcamara*, was extensively distributed. The occurrence, therefore, of an allied species feeding on a nearly allied plant in the South of France was very interesting.

Mr. S. Stevens exhibited some coloured drawings of butterflies of extreme beauty and most minute accuracy, executed without the aid of a lens by Mr. Mitchell, who was present as a visitor.

The Secretary exhibited a curious variety of *Melanippe fluctuata*, found by Mr. E. S. Haines at rest on a wall at Brierley Hill, Staffordshire, in 1864; it bore considerable resemblance to the form described by Haworth under the name of *costovata*.

The Secretary exhibited drawings of the larva, pupa and both sexes of the imago of a new Geometrideous moth belonging to the genus *Agathia*, *Guén.*; these were communicated by Mr. H. L. Schrader, of Shanghai, who found the larvæ on *Salix pentandra*, but they for some time escaped detection by reason of their resemblance to the remains of a leaf of which the softer parts had been eaten away. Four of the larvæ were found in the neighbourhood of Shanghai on the 1st of August, 1865; they were then about an inch long; between the 8th and the 14th they changed to pupæ; a cocoon was formed (but so slight that the pupa was visible through it) and attached to the stem of a twig, the head of the pupa resting in the angle between the stem and a leaf-stalk; two males emerged on the 20th and 24th of August respectively, and one female on the 21st.

The Secretary read a communication respecting the injury done to the cotton crop in Louisiana by the "army worm," the larva of *Heliothis armigera*. It stated that the crop was in danger of being entirely eaten up. Two years ago the planters of Louisiana, tempted by the high price of cotton, which was then selling at fifteenpence a pound, began to cultivate cotton, which had been almost abandoned. The sugar cane became of secondary importance. But the caterpillar arrived, and swept away the hopes of the planters in a few days. The noise made by the multitudes of voracious insects was described as audible at the distance of a mile, and to resemble the crackling of a house on fire. It was thought for a long time that the army only visited Lower Louisiana, but this was an error; in 1788, these insects destroyed 280 tons of cotton in the Bahamas; they caused the cultivation of cotton to be given up in many of the West Indian Islands, and the case was almost the same in Egypt; in 1793 this insect visited Georgia, and in 1800 it ravaged South Carolina; four years later they descended on the whole of Louisiana; and in 1825 they ravaged the whole of the Southern States, and it was very difficult even to get seed for the following year. The last general visitation was in 1845. The army worm appears often in Guiana and other parts of South America. The mischief done by these creatures is, fortunately, not always of the same serious extent; sometimes even the insects, when they come late, as they did last year, thin the seed pods, and produce a positive benefit. If it were not so, considering that they have appeared twenty-three times in the United States since 1793, the growing of cotton would be hazardous to be continued. The most favourable circumstances for the production of the army worm are heat, moisture, and clouded skies, up to the end of the month of June; when such is the case the visitation is looked upon as certain; it was so this year. The caterpillars cannot support great heat and continued drought; in Louisiana and the other States of the South, as well as in the Bahamas, a torrid summer kills them, especially where the soil is sandy. In 1826 the creatures appeared on the 1st of August in Louisiana and North Carolina, but hot weather set in, and by the 23rd of the same month they had all disappeared.

Mr. S. Stevens exhibited a house-fly to which were attached six Chelifers; and had observed another upon which were no less than eight of these parasites.

Mr. F. Moore read the following extract from the 'Journal of the Asiatic Society of Bengal,' 1866, p. 73, respecting the synchronous emission of light by fireflies (see 'Proceedings,' 1865, pp. 94, 101):—

"Camp, near Myanounng, Nov. 22, 1865.

"During a visit to Calcutta, a few months ago, Mr. Grote drew my attention to a sort of controversy which had been started at home, touching the habit, which fireflies were stated to exhibit occasionally, of a concurrent exhibition of their light, by vast multitudes acting in unison; a statement which appeared to have been somewhat sceptically received. Mr. Grote does not appear to have ever witnessed this phenomenon in Bengal, and questioned me if I had ever observed any confirmatory instance. Fireflies are tolerably well known, of course, to the resident in Bengal, but I had never there observed any such habit among the countless fireflies, which form such fiery-like ornaments to the shrubberies about Calcutta. In Pegu, however, I have witnessed the exhibition in question; myriads of fireflies emitting their light, and again relapsing into darkness, in the most perfect rhythmic unison. I much regret that I did not secure specimens, but the circumstances were as follows:—I had halted

my boat for the night alongside a small clearing in the low-lying tract of country forming a part of the Irawadi Estuary (Delta), east of the Bassein River, where the water was salt, and the entire country not more than a foot, if so much, above the flood-level. Night had closed in, and my servant, who brought in the tea, asked me to step out of my tent and see the fireflies, which, he said, he had never seen the like of before. On stepping out of the tent, a truly beautiful sight presented itself. In front was the broad and deep river sweeping on, with its indistinctly seen back-ground of primæval forest on its opposite bank. Around me was the recently-formed clearing, with its two or three huts and my own camp, as the sole proof of man's occupancy, for miles and miles, but, for all the wildness and almost desolation of the scene, the bank on which I stood was a glorious spectacle, and those acquainted with the class of native servants will well understand that it must have been at once unusual and beautiful indeed to rivet the attention of a listless khitmutgar! The bushes overhanging the water were one mass of fireflies, though, from the confined space available for them on low shrubs, the numbers may not have been actually more than are often congregated in Bengal. The light of this great body of insects was given out, as I have said, in rhythmic flashes, and, for a second or two, lighted up the bushes in a beautiful manner; heightened, no doubt, by the sudden relapse into darkness which followed each flash. These are the facts of the case (and, I may add, it was towards the end of the year), and the only suggestion I would throw out, to account for the unusual method of luminous emanation, is that the close congregation of large numbers of insects, from the small space afforded by the bushes in question, may have given rise to the synchronous emission of the flash; by the force of imitation or *sympathy*. Mr. Montgomery, of the Survey Department here, also fully corroborates the habit of our Pegu fireflies simultaneously emitting their light, but adds he has only remarked it under conditions similar to those described above, in low swampy ground. It still remains, therefore, to be decided if the insect is different from the ordinary one, or if, as I am inclined to think, the simultaneity is produced by sympathy and great crowding of individuals."—W. THEOBALD, jun.

Mr. M'Lachlan mentioned that the genus of Hydropsychidæ (Trichoptera) described by him in the 'Transactions' (third series, v. 270), under the name of Sciops, was identical with the Hydromanicus of Brauer (Verh. K. K. zool.-botan. Gesellschaft in Wien, xv. 420), which had priority over Sciops, so that the latter name must sink. The two species described by Mr. M'Lachlan were, however, both distinct from the Hydromanicus irroratus of Dr. Brauer.

Mr. Janson exhibited a small collection of Jamaican insects, the produce of the first three weeks of Mr. C. P. Gloyne's residence near George Town: amongst a few Hemiptera, an Emesa was the most interesting; and amongst the Coleoptera, an Epitragus, a Charactus, Hebestola, Desmophora, Notoxus, Helops, &c.

The Secretary read a further instalment of "Notes on the Buprestidæ of South Australia," communicated by Mr. C. A. Wilson, of Adelaide.

Mr. Pascoe read the following description of a new genus of Tmesisterninæ:—

"The Queensland insect described below is closely allied to Spinttheria, from the opposite land of New Caledonia. It is exceedingly interesting as being a second form of a group which, almost excluded from Australia, abounds in New Guinea and the Celebes (Mr. Wallace's collection alone contains nearly a hundred species), and is

represented as far as Timor to the West, Manilla to the North, and New Zealand to the South. It is also interesting from the remarkable structure of its mesosternum, which is produced anteriorly into a sharp spine, overlapping the prosternum. The following characters separate the genus from *Spintheria* and from all other known forms of *Tmesisterninae* :—

ANASTETHA, n. g.

Antennæ setaceæ, corpore longiores. Prothorax basi latus et bisinuatus, lobo scutellari producto. Scutellum elongatum, angustatum. Femora postica haud incrassata. Mesosternum antice in spinam acutam projectum.

Anastetha raripila, n. sp.

A. nigra, nitida, fere glabra, pilis argenteis perpaucis solum induta; elytris obscure rubris, plaga subtransversa prope medium sita tertiaeque parte apicali nigris, apicibus ad suturam dentatis.

Long. 5 lin.

Hab.—Rockhampton."

Papers read.

Mr. Frederick Smith read a paper entitled "Notes on some Hymenopterous Insects collected by Mr. Peckolt, at Catagallo, South Brazil." Amongst them was the *Dielocerus Ellisii* of Curtis, a sawfly which is social in all its stages, as described by Curtis, whose account of its economy was corroborated by Mr. Peckolt; but the most interesting object in the collection was the female of the stingless honey-bee, *Trigona*, which has been a desideratum with hymenopterists. Amongst some hundreds of specimens of *Trigona* Mosquito were a few workers and females, and of the latter half a dozen examples; there was no difficulty in discovering the queen, which, when her abdomen was distended with eggs, was more than double the length of a worker, and had very much the appearance of a gravid female *Termes*. The collection also included *Cryptocerus elongatus*, which was said to be destructive to nests of the mosquito bee (Mr. Bates has described another species of *Cryptocerus* as feeding on the dung of birds); and a white ant, very destructive to coffee beans, closely resembling, if not identical with, the *Termes cumulans* of Hagen.

Mr. Robert Trimen, of Cape Town, communicated a paper entitled "Notes on the Butterflies of Mauritius." Of the twenty species of *Rhopalocera* (exclusive of the doubtful native, *Thymeles Ramanatek*) enumerated by Boisduval in his "Faune Entomologique de Madagascar, Bourbon et Maurice" as inhabiting the last-mentioned island, the author himself, during a visit of three weeks in July, 1865, captured sixteen, and was presented by other collectors with the remaining four; in addition to which he captured four species, and was presented with another, not known to Boisduval as Mauritian. The five additional species were *Callidryas Florella*, *Fabr.*, *C. Rhadia*, *Boisd.*, *Terias Rahel*, *Fabr.*, *Junonia Rhadama*, *Boisd.*, and *Libythea Cinyras*, n. sp.?

Future Meetings of the Society.

The President announced that there would not be any Meeting of the Society in October, and that the future Meetings would, by permission, be held in the Rooms of the Linnean Society, in Burlington House, Piccadilly.—*J. W. D.*

The Birds of Shakespeare. By J. E. HARTING, F.Z.S.

(Continued from S. S. 424.)

RAVEN (*Corvus, corax*).*Love's Labour Lost*, Act iv. Scene 2.

The raven from the earliest times has been considered a bird of ill omen, and a raven's croak was always supposed to predict a death. Hence throughout the Plays, in the solemn passages, we find constant allusions to this bird,

* * "It comes o'er my memory,
As doth the *raven* o'er the infected house,
Boding to all."

Othello, Act iv. Scene 1.

"I had as lief have heard the night *raven*,
Come what plague could have come after it."

Much Ado About Nothing, Act ii. Scene 3.

"The *raven* rook'd her on the chimney-top."

Henry VI., Part III., Act v. Scene 6.

To "ruck" or "rook" means to squat down or roost.

* * "The croaking *raven* doth bellow for revenge."

Hamlet, Act iii. Scene 2.

"The *raven* chides blackness."

Troilus and Cressida, Act ii. Scene 3.

"Would I could meet that rogue Diomed;
I would croak like a *raven*; I would bode,
I would bode."

Id., Act v. Scene 2.

"The *raven* himself is hoarse
That croaks the fatal entrance of Duncan
Under my battlements."

Macbeth, Act i. Scene 5.

"The messenger says the servant had hardly breath to make up his message; to which the lady answers, mentally, that he may well want breath, such a message would add hoarseness to the raven. That even the bird whose harsh voice is accustomed to predict calamities could not *croak the entrance of Duncan* but in a note of unwonted harshness." (Johnson).

"The *night-crow* cried, aboding luckless time."

Henry VI., Part III., Act v. Scene 6.

Aboding, that is, foreboding. The preference which the raven evinces for "sickly prey" or carrion is well known; hence we read:

"Now powers from home and discontents at home
Meet in one line; and vast confusion waits,
As doth a *raven* on a sick fall'n beast
The imminent decay of wrested pomp."

King John, Act iv. Scene 3.

And again:

* * " *Ravens* * *

Fly o'er our heads and downward look on us,
As we were sickly prey."

Julius Cæsar, Act v. Scene 3.

The solitary habits of this bird during the nesting season are thus alluded to:

"A barren, detested vale you see it is:
The trees, though summer, yet forlorn and lean,
O'ercome with moss and baleful misseltoe:
Here never shines the sun, here nothing breeds,
Unless the nightly owl or fatal *raven*."

Titus Andronicus, Act ii. Scene 3.

And a curious belief is mentioned with regard to the rearing of its young:

"Some say that *ravens* foster forlorn children
The whilst their own birds famish in their nests."

Id., Act ii. Scene 3.

Isaak Walton, in his 'Compleat Angler,' speaking of fish without mouths, which "are nourished and take breath by the porousness of their gills, man knows not how," observes that "this may be believed if we consider that *when the raven hath hatched her eggs she takes no further care, but leaves her young ones to the care of the God of Nature*, who is said in the Psalm (Psal. clxvii. 9) 'to feed the young ravens that call upon him.' And they be kept alive, and fed by a dew or worms that breed in their nests; or some other ways that we mortals know not."

The following passage in 'Batman upon Bartholome his booke,' 'De proprietatibus Rerum,' folio, 1582, throws some light also on these lines:—

"The raven is called *Corvus* of *Corax*. . . . It is said that *ravens birdes* (*i. e.* young ravens) be fed with dew of heaven all the

time that they have no black feathers by benefite of age." (Lib. xii. c. 10).

In the 'Merry Wives of Windsor,' however, we are told that

"Young *ravens* must have food."

Merry Wives of Windsor, Act i. Scene 3.

"As wicked dew as e'er my mother brush'd
With *raven's* feather from unwholesome fen
Drop on ye both."

Tempest, Act i. Scene 2.

Wicked, in the sense of *baneful*, *hurtful*, is often met with in old medical works applied to sores and wounds. "A wykked felone," *i.e.* a bad sore, is mentioned in a Tract on Hawking, MS. Harl. 2340.

"Beautiful tyrant, fiend angelical, dove-feather'd *raven*,
Just opposite to what thou justly seemest."

Romeo and Juliet, Act iii. Scene 2.

The Quarto, 1599, and Folio, read "ravenous dove-feather'd *raven*," &c.

"Whiter than snow on a *raven's* back."

Id.

So the undated Quarto; the other editions read,

"Whiter than *new* snow upon a *raven's* back."

"Swift, swift, you dragons of the night, that dawning
May bare the *raven's* eye."

Cymbeline, Act ii. Scene 2.

"Who will not change a *raven* for a dove?"

Midsummer Night's Dream, Act ii. Scene 3.

"I'll sacrifice the lamb that I do love,
To spite a *raven's* heart within a dove."

Twelfth Night, Act v. Scene 1.

"An amber-colour'd *raven* was well noted."

Love's Labour Lost, Act iv. Scene 3.

"Some powerful Spirit instruct the kites and *ravens*
To be thy nurses."

Winter's Tale, Act ii. Scene 3.

* * "Sometimes he angers me
With telling me of the moldwarp and the ant,
* * * * *

A clip-wing'd griffin and a moulten *raven*."

Henry IV., Part I., Act iii. Scene 1.

In the Play of 'Henry VI.' Suffolk vainly endeavours to cheer up the King, who has swooned on hearing of Gloster's death, saying,

"Comfort, my Sovereign; gracious Henry, comfort!"

But Henry, likening Suffolk's message to the ill-boding note of a raven, says,

"What, doth my lord of Suffolk comfort me?
Came he right now to sing a *raven's* note,
Whose dismal tune bereft my vital powers;
And thinks he that the chirping of a wren,
By crying comfort from a hollow breast,
Can chase away the first-conceived sound?"

Henry VI., Part III., Act v. Scene 6.

"And he that doth the *ravens* feed,
Yea, providently cater for the sparrow,
Be comfort to my age."

As You Like It, Act ii. Scene 3.

CROW (*Corvus corone*).

Cymbeline, Act i. Scene 4.

Midsummer Night's Dream, Act iii. Scene 2.

Troilus and Cressida, Act iv. Scene 2.

"A *crow* of the same nest."

All's Well that Ends Well, Act iv. Scene 3.

When the mind is pre-engaged it is influenced but little by the beautiful in Nature and Art; hence:—

"The *crow* doth sing as sweetly as the lark
When neither is attended."

Merchant of Venice, Act v. Scene 1.

"The fold stands empty in the drowned field,
And *crows* are fattened with the murrain flock."

Midsummer Night's Dream, Act ii. Scene 1.

* * "Ravens, *crows*, and kites
Fly o'er our heads and downward look at us,
As we were sickly prey."

Julius Cæsar, Act v. Scene 3.

"Under the canopy * * *

I' the city of kites and *crows*."

Coriolanus, Act iv. Scene 5.

"If you fall in the adventure, our *crows* shall fare the better for you."

Cymbeline, Act iii. Scene 1.

"When you above perceive me like a *crow*."

Id., Act iii. Scene 3.

"But match to match I have encounter'd him,
And made a prey for carrion kites and *crows*,
Even of the bonny beast he lov'd so well."

Henry VI., Part II., Act v. Scene 2.

"A leg of Rome shall not return to tell
What *crows* have peck'd him here."

Cymbeline, Act v. Scene 3.

"By my troth he'll yield the *crow* a pudding one of these days."

Henry V., Act ii. Scene 1.

"Yon island *carrions* (*i. e.*, carrion *crows*), desperate of their bones."

Henry V., Act iv. Scene 2.

"And their executors, the knavish *crows*,
Fly o'er the mall, impatient for their hour."

Id.

In 'Troilus and Cressida' (Act i. Scene 2), when the forces are passing in review, as soon as the generals have gone by, Pandarus, who with Cressida is looking on, says,

"Ne'er look, ne'er look; the eagles are gone;
Crows and daws, *crows* and daws."

* * * "thrill and shake,
Even at the crowing of your nation's cock,
Thinking this voice an armed Englishman."

King John, Act v. Scene 2.

"The original has 'the crying of your nation's *crow*,' but Mr. Collier has no doubt about the above substitution, 'even at the crowing of your nation's cock,' *gallus* meaning both a cock and a Frenchman." (Douce).

"Casting forth to *crows* thy baby daughter."

Winter's Tale, Act iii. Scene 2.

"Leaving thy trunk for *crows* to feed upon."

Henry VI., Part II., Act iv. Scene 10.

"The *crows* and choughs that wing the midnight air
Show scarce so gross as beetles."

King Lear, Act iv. Scene 6.

"Light thickens, and the *crow* makes wing to the rooky wood."

Macbeth, Act iii. Scene 2.

"Cyprus, black as e'er was *crow*."

Winter's Tale, Act iv. Scene 3.

"So with the dove of Paphos might the *crow* vie feathers white."

Pericles, Act iv., Introduction.

The old text reads, "The dove of Paphos might with the *crow*," &c.

"That fellow handles his bow like a *crow-keeper*."

King Lear, Act iv. Scene 6.

i. e., like a boy employed to keep the crows from the corn-fields.
So again,

"Scaring the ladies like a *crow-keeper*."

Romeo and Juliet, Act i. Scene 4.

To fright the crows from the corn, a poor rustic, who, though armed with bow and arrows, was not supposed to have much skill in archery, was sometimes employed, and at others his place was supplied by a stuffed figure resembling a man, and armed in the same way. Ascham, in his 'Toxophilus,' when speaking of a clumsy archer, has a similar comparison to that in the text: he says, "Another cometh downe and layeth out his buttockes, as though hee should shoote at crowes."

"So shows a snowy dove trooping with crows,
As yon fair lady o'er her fellows shows."

Romeo and Juliet, Act i. Scene 5.

"Compare her face with some that I shall show,
And I will make thee think thy swan a *crow*."

Id., Act i. Scene 2.

"I had rather hear my dog bark at a *crow* than a man swear he loves me."

Much Ado About Nothing, Act i. Scene 1.

"We'll pluck a *crow* together."

Comedy of Errors, Act iii. Scene 1.

ROOK (*Corvus frugilegus*).

"Bully rook."

Merry Wives of Windsor, Act i. Scene 3.

"When turtles tread, and *rooks* and daws."

Song, Love's Labour Lost.

From the following lines it would appear that the rook was considered a bird of omen:

"Augurs and understood relations have
By magot pies and choughs and *rooks* brought forth
The secret'st man of blood."

Macbeth, Act iii. Scene 4.

But in order to understand this passage we must read "*Augurs that understood*," &c. *And* is no doubt a misprint.

JACKDAW (*Corvus monedula*).

DAWS.

Much Ado About Nothing, Act ii. Scene 3.

Coriolanus, Act iv. Scene 5.

Troilus and Cressida, Act i. Scene 2.

"When turtles tread, and rooks and *daws*."

Song, *Love's Labour Lost*.

"At your request? (*sarcastically*)

Yes, nightingales answer *daws*."

Twelfth Night, Act iii. Scene 4.

"For when my outward action doth demonstrate
The native act and figure of my heart
In compliment extern, 'tis not long after
But I will wear my heart upon my sleeve
For *daws* to peck at."

Othello, Act i. Scene 1.

MAGPIE (*Corvus Pica*).

"And chattering *pies* in dismal discord sung."

Henry VI., Part III. Act v. Scene 6.

"Augurs *and* (?) understood relations have
By *magot pies* and choughs and rooks brought forth
The secret'st man of blood."

Macbeth, Act iii. Scene 4.

So unintelligibly reads the Folio. No doubt the poet wrote "*Augurs that understood relations*," &c. (See Zool. S. S. 470.)

JAY (*Corvus glandarius*).

Winter's Tale, Act iv. Scene 2.

In 'Cymbeline' we find the word used to denote a gaudily attired person:

“Some *jay* of Italy hath betrayed him.”

Cymbeline, Act iii. Scene 4.

“What! is the *jay* more precious than the lark
Because his feathers are more beautiful?”

Taming of the Shrew, Act iv. Scene 3.

“I will show thee a *jay's* nest.”

Tempest, Act ii. Scene 2.

WREN (*Troglodytes vulgaris*).

Cymbeline, Act iv. Scene 2.

“The *wren* with little quill.”

Song, Midsummer Night's Dream.

“No better a musician than the *wren*.”

Merchant of Venice, Act v. Scene 1.

“ * * * The poor *wren*,
The most diminutive of birds, will fight
Her young ones in her nest against the owl.”

Macbeth, Act iv. Scene 2.

There are three statements made here, which, by an ornithologist, are likely to be criticised. *First*, that the wren is the smallest of birds, which is an oversight, for it is not the most diminutive even of British birds, still less so of continental species, our little goldcrest being almost one half smaller. *Secondly*, that the wren has sufficient courage to fight against a bird of prey in defence of its young, which is doubtful. And, *thirdly*, that the owl will take young birds from the nest. With regard to this last statement, see Zool. S. S. 414.

“Look where the youngest *wren* of nine comes.”

Twelfth Night, Act iii. Scene 2.

“The world is grown so bad
That *wrens* make prey where eagles dare not perch.”

Richard III., Act i. Scene 3.

J. E. HARTING.

Kingsbury, Middlesex.

(To be continued.)

Ornithological Notes from Shetland. By H. L. SAXBY, M.D.

(Continued from Zool. S. S. 293.)

APRIL, 1866.

April 1 to 8. Wind N.E. Flocks of hoopers flying northwards.

„ 8. Wind N.E. A male chaffinch seen.

„ 13. „ S.E. Lesser blackbacked gull first seen.

„ 15. „ S.E. Wheatear first seen.

„ 30. „ N.W. A few female chaffinches in the garden.

Whitetailed Eagle.—I have just been informed that about the end of March the pair of whitetailed eagles returned to their nest in Tetlar, and commenced the usual repairs. At this season they appear to wander more than at other times, and may often be observed soaring over the Loch of Watlie or high above the Vallafiel Hills, but they are very shy and scarcely ever venture within range of a gun.

Golden Eagle.—On the 21st, while in the island of Balta, I saw the golden eagle mentioned in my last communication (Zool. S. S. 291). It was sitting upon the largest of a number of scattered rocks near the edge of a cliff, and took wing the instant my head appeared above the brae, which had until then screened me from view. Being quite unprepared I could not avoid some little loss of time, therefore the charge of No. 2, fired at a distance of about eighty yards, only caused a sudden clumsy sort of tumble for a few feet, and then the bird rose and flew steadily away, although the shot had rattled loudly upon its thick plumage. We stood watching until it was completely lost in the distance, my companion contemptuously remarking at intervals, “*That old thing a golden eagle!*” and I mentally repeating his words with a sort of spiteful relish, for in the first place the disappointment was great, especially as this was my first acquaintance with this rare species, and in the second I had been sadly led astray by the hackneyed descriptions of its noble appearance, majestic flight, &c. One does not like to discard a long-cherished idea at a moment’s notice, but had an enormous short-necked, ragged-winged, corpulent old crow appeared before us at that same time it would scarcely have suffered in our humble estimation by comparison with the “king of the feathered tribes.” The old copy-books originally remark that “Familiarity breeds contempt,” but upon that head very little need be said, for in all probability the after meditations of the eagle were not particularly complimentary towards poor wingless me and my dear old double-

barrel. The numerous bodies, or rather empty skins, of rabbits which were lying in all parts of the island, proved how well this bird had been faring of late. Nearly all of them presented much the same appearance: there was a large hole torn in the side, and another at some little distance further back, and through these the whole of the viscera and a considerable portion of the flesh had been removed. Most of these remains were lying about the warren, but a few were found among the rocks near the edge of the cliffs.

Rock Dove.—Rock doves are still in flocks, although it is probable that laying has already commenced. Only a few days ago I saw upwards of twenty upon the beach at Haroldswick.

Common Bunting.—There are still some large flocks of buntings about Halligarth, but a few have paired and will probably remain during the summer.

Wren.—The song of the wren was first heard on the 7th of April.

Lapwing.—Lapwings commenced laying in the early part of April.

Shag.—*Crested* shags have returned to their breeding-places, but almost the whole of those which now remain in the sounds and voes, at a distance from the high rocks are without crests.

Golden Plover.—I have not seen any golden plover's eggs yet, although some were found on Vallafiel about a week ago. Late in March the birds had returned to their breeding-grounds, where small parties are still to be met with, although the greater number have paired. At this season they are fond of basking in the sunshine among the tall heather: this occurs chiefly about noon, when they may be easily approached, but in cold cloudy weather they are almost constantly on the alert. Most of them are now in full summer plumage.

Longtailed Duck.—Most of the longtailed ducks have left: those which remain appear to be chiefly old males.

Redbreasted Merganser.—Mergansers were last seen in flocks about the end of March.

Raven.—A nest of half-fledged ravens was found on the 4th of April, and upon the same day six fresh eggs—rather an unusual number—were found in another nest: they were all pale in colour and of rather small size.

Hooded Crow.—I have often had occasion to remark the carelessness with which the hooded crow selects a site for its nest. A fortnight ago a pair commenced building in a low cliff at Sweeney-ness, not only in the most conspicuous place they could find, but so little above high-

water mark that one night during a gale of wind the whole of their nearly-finished nest was swept away.

Snowy Owl.—On the 11th of April, two days after a gale from N.E., having picked up a feather which appeared to have been dropped from the breast of a snowy owl, I sent a man to explore the hills, and early on the morning of the 13th he came to me with a specimen of the bird itself, still living and inclined to show fight, but so heavily wounded that I was compelled to kill it immediately. It afterwards proved to be a male, measuring twenty-three inches in length, extremely fat, and with the stomach fully distended with the skins and bones of mice. Although much injured by the shot, this specimen is a very interesting one, inasmuch as it fully confirms some remarks I made upon the plumage of this species some three years ago (Zool. 8637), and which may be here quoted for the sake of convenience. "The younger the bird the more do the dark marks, especially upon the under surface of the body, partake of a barred appearance, the sharper are the edges and tips of the mandibles, and the broader and thinner, although no less keen, is the projecting inner edge of the middle claw. All of the claws are comparatively slender, and in colour resemble the bill, being of a bluish or grayish tinge, while in the adult those parts are black." Although the present example answers to the above description in every particular, yet there might be some doubt as to its age were it not, *first*, for the proofs afforded by dissection, and, *secondly*, for the fact that near the lower part of the back of the neck there still remain a number of feathers which perfectly resemble those of the first plumage, being of a grayish brown colour either distinctly barred or obscurely mottled with dull white.

Black Guillemot.—On the 26th of April I saw a few black guillemots in gray plumage, and obtained two specimens which were in the black plumage of summer. Another, a male, and, judging from the peculiar colour of the feet, a last year's bird, was perfectly black, with the exception of the well-known patch upon each wing and a number of small white marks round the base of the bill.

Turnstone.—A few small flocks of turnstones are still remaining. On the 21st of April I shot a fine male, which, having nearly completed its spring moult, was so conspicuous, by reason of his almost entirely white head and the fine chestnut colour of the upper parts of the body, that I was able to select him from the remainder of the flock, which, as far as could be observed, presented much the same appearance as in winter.

Eider Duck.—Several pairs of eider ducks have lately been seen near their breeding-places.

Purple Sandpiper.—Purple sandpipers are still abundant, although not so much so as in winter.

Redthroated Diver.—Several redthroated divers are now upon the voe. At this season they frequently utter a peculiar laughing cry, oddly termed "lamenting" by the fishermen of this neighbourhood, and which may be heard at a great distance in calm weather. It seems to be uttered chiefly at night, or when danger is apprehended in the day-time. On the 21st of April a fine male was shot by Mr. Thomas Edmonston, jun., who, observing it feeding near the shore in shallow water, approached it from seaward, thus compelling it to take flight and afford a fair shot. The poor bird "lamented" repeatedly and loudly as the boat came nearer, but, actuated no doubt by that same ruling passion which induces some criminals to indulge in a hearty meal a few minutes before their execution, it occupied the intervals between its lamentations with a diligent continuation of its search for food among the half-floating sea-weeds. With the exception of some scattered white feathers at the base of the under mandible it was in full breeding plumage. I have examined but few adult specimens of this bird; therefore it may be better, without venturing an opinion of my own, merely to call attention to the above evidence of a recent assumption of the red throat and gray neck, and also to the fact that the highly developed state of the sexual organs, and the result of a minute inspection of the bones and muscles, completely satisfied me that the bird was of mature age.

Great Northern Diver.—Northern divers are now appearing in considerable numbers. Yesterday I saw one which, at a distance, seemed to have the dark neck and double white collar perfect. A female shot on the 25th of April, although still with the throat and front of the neck white, was evidently an adult, for it contained ova as large as No. 3 shot. There are now in my possession about half-a-dozen skins of this bird, no two of which are precisely alike. I would gladly offer some remarks upon them, but that I hope to extend my experience in the matter before this time next year.

MAY, 1866.

Whimbrel.—The first whimbrels were seen on the 2nd of May, during a gale from N.E. On arriving here they are always in good

condition. The stomach of one examined on the 27th contained small mussels and fine gravel.

Scaup Duck.—Two scaups were seen on the 5th in a small sandy bay at Balta.

Mountain Finch.—On the 6th (wind strong N.W.) a mountain finch, apparently a male, took shelter in the garden, and remained there for a few days.

Longtailed Duck.—I saw the last few longtailed ducks in Balta-sound on the 18th, but a small flock was observed about two miles out at sea on the 25th.

Twite.—I saw the first twite's eggs on the 10th, but within the last fortnight they have been very abundant.

Blacktailed Godwit(?).—On the 13th, while crossing a wet meadow at Upsal, I observed a large bird, which, judging from a distant view, I believe to have been a blacktailed godwit. It was standing upon the grass beside a small stream, and as it rose, about fifty yards before me, the white tail tipped with black was so conspicuous as to leave but little doubt in my mind as to the bird's species. Although I visited the spot next day with a gun, and again saw it near the same place, it was too shy to afford even the chance of a long shot.

Redshank.—About the middle of May there were several pairs of redshanks in the marshy grounds and along shore, but I could find no eggs.

Hooded Crow.—The hooded crows mentioned in my notes for April have built a nest within a few yards of the site of the former one, which was washed away by the sea. On the 20th it contained six eggs, all of which were small, of an unusually round shape, and somewhat minutely marked. Upon the same day the nest of another pair was discovered in the same line of low cliffs. It contained one egg, which I took, leaving in its place a roundish gray beach-stone: this the birds allowed to remain, although I removed a newly laid egg upon each of the three following evenings, after which the nest was torn down by some boys who were passing in a boat. Each of these two nests was placed upon a large mass of bones, chiefly those of ponies and sheep.

Wheatear.—Wheatears are now extremely abundant. They are so clever at imitating the notes of other birds that it would often require a practised ear indeed to discover the deception. I have within the last few weeks heard them imitate the notes of the oystercatcher, golden plover, rock pipit, wren, and even part of the song of the

sky lark. Only a few days ago a fine male, sitting upon a large stone on the side of a hill, after entertaining me awhile with the cry of the ringed plover, suddenly went off into an exceedingly good attempt at that of the lapwing, but soon afterwards, having inadvertently destroyed the whole effect by a ludicrous mixture of the two, it stopped for a short time, and then commenced a monotonous "peewit, peewit," which was continued as long as I remained within hearing.

Great Skua.—The first eggs of the skua were found on the 17th: they were of a dark colour, as is usual with the first eggs of the season.

Manx Shearwater.—Manx shearwaters began to lay on the 18th.

Arctic Tern.—Arctic terns arrived on the 19th. Wind heavy, S.W.

Rednecked Phalarope.—Two years ago I mentioned the occurrence of the rednecked phalarope in Shetland (Zool. 9313). I am now happy to be able to state that they have since been frequently met with, and that there can be very little doubt that they also remain to breed. A female killed on the 19th contained eggs nearly as large as swan-shot. The food seems to consist mainly of small water-insects, but the stomach always contains a quantity of fine sand. I have examined several specimens, and the main result has been the confirmation of Mr. Dunn's statement that the largest and most brilliantly coloured are females. Even Yarrell has fallen into the error of describing the female as the male, a circumstance which throws some light upon his statement that "from the denuded state of the breast of males obtained during the breeding season, there is reason to believe that they take a considerable share in the process of incubation."

Eider Duck.—A male of this species shot on the 18th was in full breeding plumage. It was very fat, and both stomach and œsophagus contained large quantities of the common mussel.

Greenfinch.—On the 28th, during a gale of westerly wind, a female greenfinch was seen in the garden, where it remained several days.

Sclavonian Grebe (*Podiceps cornutus*) and *Great Northern Diver*.—On the 22nd Mr. Thomas Edmondston, jun., had the good fortune to shoot a fine specimen of each of these rare birds, both of which, through his liberality, are now in my collection. When first observed, the grebe was swimming quietly among the floating sea-weed near the shore. It dived as the boat came near, remained submerged for about twenty seconds, and instantly on re-appearing took wing, when

it was shot. It was an adult male, in magnificent summer plumage. About half of the contents of the stomach consisted of feathers, the other half of the remains of fish, among which were some small pieces of gravel and the claws of large beetles. The diver was shot from the land, and was approached in the usual manner, that is, by running while the bird is under water and lying hid as long as it is upon the surface. This specimen also was in fine summer plumage, which would have been perfect but for the few white and brownish feathers about the base of the bill.

HENRY L. SAXBY.

Baltasound, Shetland, May 31, 1866.

Ornithological Notes from the County Dublin.

By HARRY BLAKE-KNOX, Esq.

(Continued from S. S. 300).

JUNE—SEPTEMBER.

Swallow.—After the fine weather of the last few weeks (June 1st) rain has come in abundance, with a furious gale from the east. The poor swallows are suffering greatly to-day for want of food to feed their young. I saw some dozens hawking over a large pond, formed by one of our worked-out granite quarries: many took the Coleoptera from the surface, like gulls, dipping merely the beak; others quite alighted on the sline and awkwardly walked about picking up the insects; while others again searched in sheltered nooks and amongst the stones for food. No insect could have lived on the wing such a day. I think it is generally believed that the swallow feeds essentially on the wing, but I see beyond doubt that, if compelled, it can feed in a much less dignified manner. The sudden dip taken by the swallow into ponds I chiefly found to be for the Coleopterous insect called "whirly-gig," and not, as we read, to drink, though undoubtedly this is a way of drinking, although I most frequently find them alight to drink.

Martin.—The mud chiefly used by the martins is that from roads, the hoof-prints being that preferred. By watching the birds collecting, through a glass, I found a kneading process carried on, the mouth being filled, and that taken in ejected and then heaped on top of the upper mandible. Some birds shot in the act had the mouth full, as well as the top of the bill heaped to the forehead; a glutinous

substance was apparent in the mouth. The stuff selected is generally very dry stone-dust, a bad building material one would think, but this stuff, when kneaded with the saliva of the bird, forms a cement much harder than if saturated with water. Both soft and dry mud are to be had on the roads, so that this selection of dry material cannot be compulsory: both sexes carry the mud. The martin also builds with the sea-mud gathered in the little tidal harbour of Bullock: the large amount of salt in this sea-mud, one would consider, would make it useless as a building material, as in damp weather it must become more or less moist. I quite agree with White that the house martin copulates in the nest; every observer must have seen a couple of these birds flying into their nest squealing: I have frequently seen two chase one into a nest, and, instead of thinking this a chase after a plunderer, I always considered it two males toying with a female, the cries never at these times indicating anger. I am sorry to have to upset the pretty, though unnatural, theory of the constancy of mated birds; among martins it cannot hold, for many males will enjoy one female while she is collecting mud. Copulation is performed as well on the ground as on the wing and in the nest.

Sand Martin.—We have a very large colony of sand martins at Ballybrack, in this neighbourhood, and as I find their architecture peculiar, some remarks may not be unacceptable. *Note-book.*—May 21st, 1862. Visited the sand martin colony, at the sand-banks of Shanganah, to-day, to procure some eggs: I excavated for several nests, having a great demand for eggs this year. The birds are in immense numbers; there must be more than a thousand pairs. The new holes are generally two feet in depth: great numbers of holes are unfrequented, and, from the immense size of some, must be of very long standing. Of late years the birds build in almost inaccessible places, the holes within reach being generally those of previous years, as I find a new hole almost invariably made each year: those in which you are certain of finding a nest are very small, and require considerable working to enlarge them for the insertion of the hand and arm; the soil is, however, soft. At the mouths of all the holes are great numbers of fleas, those uninhabited having as many as those which are tenanted: how these birds can incubate among such numbers of blood-suckers, or how the nestlings can live if subjected to their ravages, is to me a mystery. The nests were, without exception, composed of damp sea-weed (I should have stated that the sea nearly washes these cliffs), very shapeless, and lined with a dryer sea-weed,

but of the same coarse texture as the body of the nest—a most uncomfortable bed. Plenty of feathers are to be had on the shore. The eggs are transparent white, the yolk causing a pink tinge, and the air-cell discernible: many eggs are speckled with red or brown, but these marks are caused by the droppings of the fleas which frequent the holes, and come off with slight moisture. All eggs taken were quite fresh, and some nests still unfinished. The eggs were of all shapes, from that of a kingfisher to that of a swift, though of course smaller: the greatest number was six in a nest; this occurs often. August 9th, 1862.—Visited the sand martins again at Shanganah, to procure specimens of the young in first plumage: I took three from a nest fully fledged; most other nests were unoccupied. The second nest is built in the same hole, just beyond the first, which still remains: how the sand is removed, without disturbing the old nest, I do not know. The new nest is composed externally of hay, is flat and shapeless, lined copiously with feathers of the domestic fowl, wool, &c. This difference of material is very strange; that in the warm summer, hay, straw and feathers should be used, and in the changeable spring damp sea-weed.

Swift.—Notwithstanding the bad reports of some of the correspondents of the 'Zoologist' that the swift is disappearing from their neighbourhood, I am grateful and happy to say that the dear old fellow is still abundant in this county, though of late years, perhaps, not so abundant as of yore. I rarely see those delightful and large flocks of swifts I used to see collect before a summer evening's shower, and hawking in the one spot for five or ten minutes at a time: this is one of those beautiful and wonderful sights which must instinctively draw a gaze from the most apathetic creature of our species.

Greenfinch: Food and Nesting of the Young.—It is generally quoted as an extenuating circumstance for the mischief, or so-called mischief, caused by birds, that they consume a great amount of insect-life to feed their young. Though a lover of the bird, still as a naturalist I cannot but state that I never knew the greenfinch to feed its young upon anything but the unripe or sprouting seeds of various weeds and garden plants. This year I have examined some dozens of nests of young, from a day old and upwards, carefully extracting the mass of food from the crop (in no case did a bird die), which in many cases would have filled a large tea-spoon, and only once did I find a larva, and that, I thought, must have been taken accidentally with the seed. The seeds are given to the young quite entire, though

huskless, no triturating process appearing to have been performed on it by the parent. One feed seems to last a long time in the throat. The parent birds are rarely seen near the nest. At night the young, from their earliest youth, sleep uncovered by the parent. I decidedly think it wrong to class the greenfinch among the true *Fringillidæ*, from which it differs in many things so widely. I have had nests of the chaffinch and greenfinch within a few yards of each other, and when approached by me the chaffinch would be very loud in his "chink chink," while the mild "poohey" of the greenfinch only might be heard. On looking into the nest the young chaffinches would always gape and seem hungry; not so the greenfinches. The throats of the chaffinches always appeared empty, and they are invariably fed on insects; the throats of the greenfinches were always well packed with food, and consisting invariably, I may say, of seeds. At night I would always start the chaffinch from the nest: not so with the greenfinch. In the habits of the adult there are many things dissimilar to the true *Fringillidæ*.

Bullfinch.—In orchards the bullfinch, notwithstanding all the good that is said to be done by him in killing insects in buds, &c., does considerable mischief, if so it can be called, in devouring the embryo-buds and flowers that are quite untainted by any disease, and *not touching those in which an insect is deposited*, for food. I believe that, did every bud come to perfection that a tree produces, many of the flowers would have to fall before coming to maturity, or the fruit be dwindled for a want of nourishment; so I do not believe that bullfinches are anywhere plentiful enough to do more mischief than Nature herself would have to do, to give man even a hundredfold. But that is not enough for "Grasp-all;" he is, in his own eyes, wiser than the Great Ruler; he votes the bird "vermin," and destroys it as such. I cannot bear to read "old woman's stuff and nonsense," and such it is to say that the bullfinch does not break and eat buds and young fruit, for any one who has killed them among fruit trees will find their crops packed with buds, and invariably the youngest and best. In summer the chief food is fruit, and seeds in winter—the seeds of the various fir-trees; in spring, buds, &c.

Black Tern.—I procured a yearling bird of this species in Dublin Bay, this autumn.

Widgeon.—A Mr. Hely Hutchinson ('Field,' No. 710, page 103) has shot a widgeon in this county, in the month of July. The bird was a female, and the Editor of the 'Field' thinks that it may have

been breeding. Of course this is doubtful, but there is no doubt that if it were, it will never breed again, as its head was sent to the 'Field' office. A careful examination of the ovaries would have proved this question, and what a pity the bird did not pass into hands to be examined. I could have told accurately if the bird had bred or not; but now we must content ourselves to know that a widgeon has been killed in the County Dublin, in summer.

HARRY BLAKE-KNOX.

Dalkey, Co. Dublin, August 29th, 1866.

A Short Account of a Visit to the Farne Islands during the Nesting Season of 1865. By WILLIAM BROWN.

In the beginning of the month of June I paid a visit to these Islands. Mr. H., the lessee of the Islands, who is an enthusiastic naturalist, having kindly invited me to spend a few days with him, to enable me to observe the birds with greater convenience to myself, than coming from North Sunderland in a boat every morning.

I now subjoin my notes on the nesting habits of each bird, taking them in their natural order:—

Rock Pipit.—Found several nests of these birds, but the eggs all incubated. The nests were placed at the top of the rocks, among weeds; one was built in the crevice of a stone wall.

Sky Lark.—Several pairs breeding.

Oystercatcher.—Found several nests, all of which were lined with shells, &c. Mr. J. Edmund Harting (Zool. 9411) mentions that, in Walney Island, he only found one nest lined with shells, the rest being mere hollows in the *sand*: the situation of the nests on the Farne Islands was rather different, the *sand* being a rough gravel. From this the following conclusion may be drawn,—that, where the nest or rather hollow, is placed among sand the lining of shells is dispensed with, but when among gravel or shingle the lining is necessary to make the inside of the nest of the requisite smoothness for receiving the eggs. This is only conjecture, and therefore open to doubt.

Ringed Plover.—Rather scarce. Only two nests, both with incubated eggs.

Sandwich Tern.—Numerous, breeding principally on a stony mound. The nests being placed close together, great care is necessary to avoid treading upon the eggs. The nest is a mere hollow, and hardly that.

Common and Arctic Terns.—Very numerous. Impossible to distinguish between the eggs of these birds, which were placed in hollows, both on the grassy and stony part of the Island. A great dissimilarity among the eggs in the same nest, both in size and colouring, which induces me to believe that these birds lay their eggs in any nest that comes first to hand. In only one instance I found four eggs in a nest. The arctic terns were at least ten to one of the common.

Roseate Tern.—Said to be a visitor, but I did not meet with a specimen of either the bird or egg.

Herring Gull.—Tolerably numerous, but scarce in comparison with the next species. The eggs are distinguishable from the lesser black-backed gull's by their greater size and larger blotches of colouring. Nests of dried grass, &c., placed on the bare rock.

Lesser Blackbacked Gull.—Very numerous. Nests and situation the same as the preceding species. I obtained a beautiful light blue variety of the egg.

Kittiwake.—Plentiful. Nothing unusual about nests or eggs.

Common Shieldrake.—A pair or two of these birds inhabited some rabbit-burrows, but, on account of their scarcity here, I did not disturb them by attempting to examine the nests.

Eider Duck.—Numerous. These beautiful ducks were very tame, allowing you to approach quite close to them. I obtained some of the down; when taken from a dead bird it has no elasticity. In one of the nests I found ten eggs, no doubt the produce of two birds, as four or five is the average number of eggs for one bird. The nests are formed outwardly of a kind of weed, and lined inside with down; sheltered places among the rocks are the situations most frequently chosen for the nest-site.

Cormorant.—Numerous, the nests of sea-weed being placed quite close to the edge of a rocky island (North Wamses) that they inhabit. Certainly some of the much advertized disinfecting powder would be a fit present for these birds, to enable them to sweeten their unsavoury abodes.

Green or Crested Cormorant.—Three pairs of these birds had nested and laid their eggs, but they were unfortunately shot by the fishermen.

Guillemot.—Very numerous. These birds breed on the Pinnacles (detached rocks rising from the sea), upon the flat tops of which the eggs are deposited, in such numbers that it was impossible to

move without treading upon them. I noticed the ringed guillemot here.

Puffin.—Numerous; breeding in the rabbit-burrows. A bird was caught while sitting, and I had an opportunity of testing the strength of its mandibles, as it caught my finger between them, and fully convinced me of their ability to hold the bird's slippery prey.

I have published the above notes in the hope that they may prove useful to naturalists. Great credit is due to Mr. H. for the way he has preserved the birds from the ruthless plunder of both their eggs and young, to which they were subjected before he took up his residence on the Island. Many species had been almost driven away that are now quite numerous. The shieldrake and little tern, which used to breed on the Bamborough coast, are now never seen in that neighbourhood. Wild-fowl are plentiful during the winter. The Farne Islands are well worth a visit by the naturalist, the birds being so tame that they can be observed at leisure, and the eggs and nests quite accessible.

WILLIAM BROWN.

Stockton-on-Tees, October 4th, 1866.

NOTICES OF NEW BOOKS.

'The Birds of Middlesex: a Contribution to the Natural History of the County.' By JAMES EDMUND HARTING, F.Z.S. London: Van Voorst. 1866. Post 8vo., 284 pp. letter-press, and a frontispiece by Wolf. Price seven shillings and sixpence.

From a scientific point of view a list of the birds of an English county promises but little of interest. The area of a county has no natural limits, and the birds which accidentally pass over it, or occasionally perch on its trees or alight on its waters, have no dwelling place there: they are no more birds of Middlesex than birds of Dorset or of Shropshire; they have no claim on the county or the county on them. The birds of Great Britain, Ireland, Iceland, Madeira, the Azores, &c., seem to possess a kind of connexion with those islands: the limits are clearly marked by the ocean; but the limits of a county are purely artificial, laid down by man, with some political object. Viewed then as a contribution towards physical geography, I regard a county list of birds as entirely useless, and only interesting as it affords

the compiler a convenient opportunity of recording his observations, experiences and opinions. Again, I think there should be a classification of the species totally independent of the technical division into fives or threes, and based on natural characters, whether of physiology or habits. I have shown, in "An Appendix to the Letters of Rusticus," my own view on this subject, dividing the species into five principal groups: 1st, those which continuously inhabit any given locality, as the crow, the sparrow and the heron; 2nd, those which breed in the locality, but retire to warmer climes in the winter, thus breaking the continuity of their residence, as the swallow, the nightingale, the turtle dove, the corn crake; 3rd, those which do not breed there as a rule, but regularly spend certain winter months there, as the redwing, the fieldfare, the woodcock, the snipe; 4th, those which we see only on the passage in spring and autumn, as the ring ouzel; and 5th, those birds whose visits are occasional and accidental, as the golden oriole, the bee-eater, the nutcracker, the stork, the ibis, the avocet—birds which have no geographical connection whatever with the locality under consideration.

I could have wished that Mr. Harting had adopted some such classification; but he has contented himself with saying that of the 225 birds that have occurred in Middlesex, 60 are resident, 68 migratory, and 97 rare and accidental visitants, thus omitting to distinguish between those which regularly breed in the county, and are therefore truly indigenous, and those which visit the county for food only in the winter months.

Mr. Harting's arrangement of species,—it is the fanciful quinary arrangement of Vigors,—however, serves as well as any other for the purpose of introducing a variety of observations and records, both quoted and original, and these really constitute the value of the book. The author tells us he does not profess "to be a scientific ornithologist, according to the modern acceptation of the term," but he is something far better: he is thoroughly acquainted with the living birds, and touches with a master's hand the peculiarities of each where peculiarities exist. In order to exemplify this, I will give a few of his memoranda in his own words, and I feel confident these will do more to establish his reputation as an observant naturalist than any commendations of mine.

Nuthatch.—"In January, 1862, I saw a pair of nuthatches upon a large oak at Bentley Priory, Stanmore, my attention having been first drawn to them by their loud note, which struck me as not unlike

that of the great tit, although much louder. Like the last-named bird, its note varies at different seasons of the year; that which is uttered in the breeding season being very different to that which is heard at other times. I believe that nuthatches pair for life, and remain in pairs throughout the year, not flocking in winter like other birds, for I have never observed the young following their parents in the autumn, as is the case with some species; from which I infer that, as soon as they are out of the nest, the old birds leave them to shift for themselves.

“The nest is a difficult one to find, secreted as it always is in the hole of a tree. On the 10th May, 1863, I obtained ten beautifully marked eggs of this species from an old tree at Harrow Weald.

“A few years ago this bird was comparatively common in the neighbourhood of Ealing, especially in autumn, when it might frequently have been heard and occasionally seen running up and down the elm-trees, hammering at the bark, and uttering at intervals its not unpleasing note. Of late years it has become much more rare. Mr. Power observed a particular bird of this species at Ealing, which was in the habit of carrying off the acorns from an evergreen oak, but what he did with them he was never able to ascertain. I have seen a nuthatch constantly on a certain gate-post that had a fissure in the top, on which it used to fix acorns and beech-mast, and then hammer at them and extract the kernels.”—pp. 117-18.

The curious idea that we have two species of cuckoo is alluded to, but, as I consider, very properly dismissed in a few words. I have been so often appealed to on this subject, that I desire to say I fully coincide with Mr. Harting's view. Still I am quite willing to admit that the arrival of a cuckoo in May, clothed in the beautifully barred brown plumage of the young, is a subject that merits the most rigid investigation.

Cuckoo.—“The adult brown cuckoo is thought by some to be a distinct species, and has been figured and described under the name of *Cuculus hepaticus*; but I think there can be little doubt that it is only a variety.”—p. 120.

Under the kingfisher we have some more interesting observations, both copied and original.

Kingfisher.—“Resident throughout the year, although many leave us at the approach of winter. A few pairs breed on the banks of the Brent and Silk stream, and also along the Thames and Colne. Kingfishers always appear most numerous in autumn, and naturally so, for the young are then flyers, and may be found at all our brooks.

I hardly know a prettier sight, or one more gratifying to the naturalist, than that of a kingfisher feeding. Many a time have I lain at full length, by the water side, and screened by a thick bush, watched one of these birds dart into the stream from a favourite stump, and, seizing a passing fish, return with it to its perch. Invariably holding its prey behind the gills, it would, on regaining the stump, knock the fish several times against the wood, until stunned or dead, and then swallow it whole, head first. I have been astonished to see how many fish so small a bird could swallow consecutively. I once saw a kingfisher take five good-sized minnows, one after the other. That the bird is capable of being tamed may be seen by any one who will take the trouble to visit the fish-house in the Zoological Gardens, where there are at present several live kingfishers. One of these is so tame that it will readily perch upon the keeper's right hand, and seize a fish from his left. Although a short-winged bird, the kingfisher has great powers of flight. I have more than once seen one fly out across a harbour until the eye could follow it no longer. Mr. Henry Hussey, on Christmas Day, 1863, saw one flying over the Serpentine in Kensington Gardens, a singular locality for such a bird.

“In an interesting communication from Mr. J. H. Belfrage, of Muswell Hill, referring to the kingfisher, he says, ‘A curious instance of the instinct displayed by one of these birds came under my own observation. We had occasion to empty a small pond in our garden, for the sake of having it cleaned out. When that process had been gone through, there still remained about three inches of water, and into this shallow pool we turned about four dozen very small Prussian carp. The following day a kingfisher appeared, and continued to visit the pond daily, until all, or nearly all, the little carp had disappeared. The bird was frequently seen there, perched upon the railings of the pond, or flying away from it scared at our approach; but when the pond was filled by the rain it disappeared, and was not seen again. There were then only one or two fish left, and I never remember to have seen a kingfisher in the neighbourhood either before or since.’ By what curious instinct, then, was this bird led to an isolated pond far from its usual haunts, and at a distance from any stream, where it became aware not only of the sudden appearance of fish, but also of the sufficient shallowness of the pool to enable it to take them?”—pp. 121-3.

The supposed occurrence of the American barn swallow in England is one which requires further investigation, and it is much to be

regretted that this can scarcely be given to the subject without much destruction of swallow-life.

“I have several times seen a bird which I take to be the barn swallow of America (*Hirundo rufa*), and which, I believe, is not uncommon in England. It differs chiefly from *H. rustica* in having the under parts, from chin to vent, light chestnut instead of white. Mr. W. H. Power says that he has more than once shot swallows with the under part of a light chestnut; but as these were generally obtained in the spring he took them to be merely fine-coloured males of *H. rustica*.”—p. 124.

I find the following memorandum in my note-book, under date of October, 1862, and, as it has not been printed, I give it for what it is worth. One thing is perfectly clear, that I had no thought whatever of referring my captures to Wilson's American species, *Hirundo rufa*:—

“Passing the Eastern Counties Railway-station, about three in the afternoon, there were a number of young swallows flying very low around and about the shops in front of the station: these little birds were so inexperienced in the ways of the world that they did not attempt to escape a parcel of street boys, who knocked them down with their caps, and offered them for sale at one penny each. I bought eight, laying out eightpence for the mere pleasure of rescuing the birds from the boys. These young swallows had the belly and vent of a decided reddish brown, entirely different from that of adults, a circumstance which our ornithologists have not noticed: there can be no doubt that this is a migratory movement, and that the birds were young ones, not sufficiently advanced to travel southwards in company with their parents.”

I might select instructive passages to almost any extent; but it is needless: these are sufficient to exhibit, in their proper light, the acumen of the observer and the truthfulness of the record: I must also invite attention to the kindly spirit which breathes throughout, lighting up each page with a genial word for somebody or something. Such books and such writers deserve success.

EDWARD NEWMAN.

‘*A Naturalist’s Ramble to the Orcades.*’ By ARTHUR W. CRICHTON, F.L.S., Z.S., &c. Fcap. 8vo., 132 pp. letter-press, and a lithographic frontispiece by Wolf. London: Van Voorst. 1866. Price four shillings.

THIS little book is a perfect gem: the sea-mew floating on the binding; the owl gliding over the bracken, loaded with provender for her fluffy children, who, notwithstanding their well-stored larder, seem to be waiting with all the gravity of judges, bewigged and begowned, for the dainty morsel we see in transit; the cormorants holding their nocturnal meeting on the little rocks, so evidently to be covered at high-water: these things display to great advantage the peculiar genius of Wolf, matchless as it is at producing a faithful transcript of Nature; and at the same time they constitute a most fitting ornamentation to a book which tells of Nature and her ways where man has not yet attempted to drive his snorting locomotive, marring the face of sunny day with its smoke, and making night hideous with its unearthly scream. Seas and sea things, seals and oystercatchers, puffsins, peregrines and pigeons, hustle together as in their everyday life, or pass by us like the figures in a moving panorama.

Utterly regardless of the *inæ* and *idæ* under which collectors have classified our arsenic-seasoned skins, Mr. Crichton describes scenes just as he sees them, adopting simply a chronological arrangement of occurrences.

There is something very captivating to the general reader in this desultory, this touch-and-go method of noting observations, jotting them down in the order in which they are made: it has the advantage, too, of liberating the writer from all restraint, and I shall not hesitate to adopt his plan in the arrangement or rather non-arrangement of my extracts.

Flight and Food of the Oystercatcher.—“At this moment, careering at a great height, there passed an amazing flight of oystercatchers, the nature of the birds being at once evident from the speed with which they cut the air, carrying their long pointed mandibles straight before them in a direct line with the centre of their bodies, and giving utterance, one and all, to a sustained high-pitched piping note almost amounting to a shake. * * * It must not be supposed, because this bird is so named, that its entire food is restricted to its bivalve

diet, as many kinds of Crustacea and small marine insects are found in its crop.”—p. 10.

Seals at Home.—“ I raised my glass and swept the distant view, and then brought it steadily to bear upon the spot. Great indeed was my surprise and pleasure when I descried, for the first time in my life, from a dozen to fifteen of these curious creatures. As we drew nearer the spot, the scene became every moment more intensely exciting, not to say amusing to behold. Varying very materially in size, from six and seven feet long down to three or four, they appeared to be of two kinds, the common seal (*Phoca vitulina*) and the Greenland or harp seal (*P. Greenlandica*). Some stretched out on the bare dry sand, were basking motionless, in evident repose: while others were performing the very drollest antics, pursuing one another in playful mood—propelling their unwieldy bodies in a sort of snake-like manner, with a peculiar undulatory movement of the tail, their shining forms flashing in the clear sunlight, as they disported themselves in gleesome merriment. Some, gliding off the bank dived invisibly away, while others, reappearing from the element at different points, went shuffling along at the edge of the water. As I grasped my rifle with the eagerness of hope, the seal-hunter gravely hinted that our best precautions would be as unavailing as my own aspirations, since the seals upon this bank were always extremely wild, being so often scared by the passage to and fro of vessels in the Firth. And true enough; for as our nearer approach seemed at first to increase at once the life, the interest, and the reality of the scene, and these extraordinary animals loomed more distinctly upon the sight, they all at once, as though the act were preconcerted, in the twinkling of an eye, scuttled simultaneously into the water, where with a violent splashing and vexatious turmoil, they vanished from the sight. Here and there, at various points a vast distance off, they exhibited for a moment their black round heads, resembling in a great degree the larger cannon-shot which in naval practice seem to rest for a moment on the surface of the water ere they finally disappear. * * * We now bore away towards the mouth of the Firth, making for a bank of larger extent, about two miles off the point of Tarbet Ness. Wherever a point of dry sand came into sight there would seals be lying—the gulls quietly feeding amongst them in the truest spirit of fraternization.”—p. 19.

The reading and quoting of descriptions like this have a tendency to induce reminiscences of days gone by, of things *quæ ipse vidi et*

quorum pars parva fui : I have taken a few liberties with the quotation besides reducing it into very humble prose. I too have seen seals basking on the sand, frolicking with their little ones, and plunging into the water at my approach, and I have noticed a peculiarity in their actions which seems to have escaped Mr. Crichton, or he would certainly have described it with his graphic pen. The seal glides into the water sideways, and when completely immersed turns on its back, and in that position makes its first dive, swimming with its belly upwards. I have often been gratified in observing that the seals in the Zoological Gardens have retained this peculiar mode of sub-aqueous progression, even in the limited space allotted them, thus obeying a natural instinct under circumstances of great difficulty.

Nesting-place of Sea Birds at Scrabster.—"The same evening I took a stroll along the heights to the westward. The air was calm and still, and the sea smooth : and as I threaded the edge of the cliffs that stretch away beyond the little village of Scrabster, where his late Majesty once possessed a royal castle, a mingled concert of birds' voices suddenly pervaded the otherwise silent air, and as I neared the spot a countless throng of sea-fowl were nestling and huddling together upon the turf-mantled summit of a shapeless mass of stone, which was completely isolated from the mainland by a deep and sickening abyss. I could have shot hundreds, but it would have been impossible to obtain one. This was the only spot on this point of the coast on which I found birds congregated to this extent. They had evidently chosen it as affording them the best protection, on account of its insulated position. They seemed perfectly aware of their security and remained serenely undisturbed at my approach."—p. 30.

Cormorants.—"Here and there I see a solitary specimen of the lesser blackbacked gull flying far out of shot along the shore, while o'er the bosom of the emerald ocean flap dark detachments of cormorants or shags, looking for all the world like long-necked demons speeding on an errand of death or torment to some imprisoned soul. Steadily onward, let the wind be high or low, like the arrows of remorseless fate, they cleave the unresisting air, until perceiving some wandering shoal of coal-fish or blenny, they halt upon the swelling sea, and, after diving and fishing until their voracious appetite is temporarily appeased, or their craw well provided with fish, resume their unhallowed progress to some favourite rock to digest at leisure their unsavory feast."—p. 35.

But let us accompany our author to the gusty summit of the Black Craig, and look down, with dizzy and bewildered brain, on the birds nesting on its sea-face. The description is true to Nature.

The Black Craig.—"Just as my head appeared above the topmost brow, my eyes were greeted with a pleasant sight. All the more lofty ledges of this most horrid cliff were the breeding-places of the herring gull, which tenanted them in surprising numbers; the birds dropping off as I approached, with wings extended on the air, with a grace and unaffected ease that, if one could only divest one's self of unpleasant associations, was elegant and lovely to behold. Craning for a moment beyond its edge, the dark blue heaving ocean-swell was seething on the rocks below—far, far in the dizzy distance. The smooth, short, sheep-nibbled, slippery turf slopes, for some yards distant, down towards the sudden precipitousness of the crag, so that with a brisk wind your footing, in such a situation, becomes unpleasantly uncertain.

"On the first undoubted evidence of your unprivileged intrusion, the birds, simultaneously taking flight in myriads and myriads, fill the air around with their wild and multitudinous cries, sailing in whirling circles round your head in a manner that cannot fail to call forth the envy and admiration of a pinionless biped—causing by their intricate and airy evolutions a perceptible dizziness of brain as you peer into regionless space above.

"I have repeatedly noticed upon these occasions that these birds never place themselves in such a position that, were you to fire and kill one, he would fall upon the land upon which you stand. The whole time that I remained upon this spot, with this vast assemblage of sea-fowl so close and noisy, I could not have shot a single specimen but would have fallen into the sea below; consequently I did not fire at all. On a subsequent visit to the spot, I found a pair of peregrines breeding in the face of the cliff. Their young were evidently hatched, as the sharp, shrill, *cheep! cheep! cheep!* of the female as she continually disappeared and returned with food, dropping like a stone over the edge of the rock, and her rapid gliding motions beautifully helmed by her spreading tail, fully tended to confirm. The effect of the sunset upon her wing-coverts and tail-feathers, as she threw over to the light, was very curious and rich."—p. 39.

Let us hasten on to Hoy Island, so familiar in name to all our ornithologists. It is really refreshing to see that some of our sea-birds yet remain to us, and that the fate of the lamented gare-fowl is an exception rather than a rule.

“We now draw near the magnificent extremity of Hoy Island, formed at this point by varied rocky cones of gently rising crag, and beautifully backed by the cone-shaped Hill of Hoy, towering to the right in the memorable and stupendous Head. Raising my glass, as we approached, and carefully scrutinizing every nook and cranny, my delight was unbounded at the aspect of the scene, but when the eye was enabled to take in a wider grasp by a nearer approach, words must fail in making description simulate even a faint reality of that which met its gaze. Resting upon every possible projection, and upon innumerable ledges, so small, narrow and constrained, that to all appearance there was scarcely space for a mouse’s thoroughfare, that lovely bird the kittiwake abounded in myriads and myriads; and, while our closer neighbourhood was the signal for thousands to circle far aloft, and fill the air ‘with sounds discordant in sonorous chaos,’ others rested in vacant immobility, looking like stuffed specimens effectively arranged upon a noble mass of artificial rockwork for some Brobdignagian museum. Nothing can exceed the unsullied purity of these birds’ plumage. In no single instance can you observe a feather draggled or soiled, or ruffled; the snowy whiteness of their plump, smooth breasts, surpassing in clearness the chastest lustre of the spring-born lily, or the unspotted surface of the winter’s drift. Far above, upon the lofty grassy steeps, but more sparingly disposed, the herring gull, as usual, may be seen to pair. A few razorbills have taken up their quarters in the lower crannies, and, resting upright on their short flat feet, scrutinise our movements with a grave attention, like the bench of bishops watching with absorbed gaze the progress of a warm debate.

“So beautiful, so very beautiful, was the sight that I paused longer and longer still, ere I dared to fire my gun, and thus introduce discord and confusion into this magnificently grouped array. I was also undesirous to do so before I had further inspected the scene while under its present aspect of comparative repose.

“Accordingly, striking sail and depending on the oars, we now rounded a bluff rocky headland, and entered a more cavernous and indented inlet, overhung by a frowning and tremendous height. Here a variation in detail occurred, and the scene appeared to shift and alter like the changes in a play, illustrating in a beautiful manner the interesting fact that each species of bird frequents, during the all-important incubatory process, its own special locality, chosen by itself, according to its nature and position, perfectly distinct from the rest,

bounded by a land mark as rigidly observed as those of neighbours in a well-regulated kingdom, and wisely and accurately adapted to the nature and habits of the bird.

“Far above, out of harm’s reach, the dark and gloaming shags were resting on their nests, constructed on projections apparently not half big enough to hold them, and looking no bigger than rooks.”—p. 56.

Were I disposed to be critical, I could readily point out half a dozen little mistakes that might have easily been avoided: as an instance, Mr. Crichton quotes, and with apparent approbation, the following passage from Stanley’s *Birds* in reference to the gannet’s plunging with such great force:—“This velocity is so prodigious that the force with which it strikes the surface of the water is sufficient to stun a bird not prepared for such a blow, or to force the water up its nostrils. But the gannet has nothing to fear from either of these causes, the front of the head being covered with a sort of horny mask, which gives it a singularly wild appearance; and it has no nostrils, a deficiency amply remedied by the above-mentioned reservoirs of air and capacity for keeping them always filled.”—p. 96. Mr. Crichton must be aware of the numerous errors contained in this short sentence, and therefore I think should not have quoted it as illustrative of his subject. In the first place, the existence of the reservoirs of air is very apocryphal, and were it otherwise these reservoirs could not supply the place of nostrils: in the second place, the bird possesses nostrils, although somewhat concealed. But the entire passage is objectionable, and should not be quoted and left without correction. Instances of this want of care are not numerous, and can easily be remedied in future editions.

In conclusion, I may cordially recommend this little book, both to those who meditate a trip to the Orkneys, and to those who, unable or unwilling to brave the dangers of the seas, still love to visit these wild scenes in imagination, while cosily seated by their own fireside.

EDWARD NEWMAN.

The ‘Dictionary of British Birds.’—

Bunting, Little (*Emberiza pusilla*, *Pall.*).—Omitted in the ‘Dictionary.’ A specimen taken alive at Brighton on the 2nd of November, 1864, and showing no traces of captivity, is recorded by Mr. Dawson Rowley, in the ‘*Ibis*’ for 1865, p. 113. It was forwarded to Mr. Gould, who drew its portrait for his work on the *Birds of Britain*.

Gallinule, Purple (*Porphyrio hyacinthinus*, *Tem.*).—Omitted in the ‘Dictionary.’ Specimens of the purple waterhen seem to have occurred in Britain repeatedly, but

have generally been regarded as escaped birds. One was shot near Campbelton, in Argyleshire, in 1863, and was exhibited by my friend Dr. Dewar to the Natural History Society of Glasgow, on the 29th of December of that year. I have examined this specimen, which showed no marks of confinement, and was in beautiful plumage. Another was killed in Hampshire, on the 10th of August, 1863 (Zool. 9418). As this species is plentiful in many parts of Europe, there seems to be nothing improbable in its accidentally visiting Britain.

Water Ouzel.—('Dictionary,' p. 214). The "elegant variety" killed near Edinburgh, and the "Penryth Ouzel" of Latham (Dict. p. 213) were certainly not varieties, but merely the first plumage of the young water ouzel (see Zool. S. S. 20).

Owl, Hawk.—('Dictionary,' p. 217). A third British specimen, shot near Maryhill, in Lanarkshire, was exhibited by Dr. Dewar to the Natural History Society of Glasgow, in December, 1863, and is now in his collection.

Pipit, Pennsylvanian (*Anthus ludovicianus*), is included in the list at the end of the 'Dictionary,' but omitted in the body of the work. It has undoubtedly occurred several times, and is the bird described by Macgillivray as *A. spinoletta*. (See Bree's 'Birds of Europe,' vol. ii. p. 170.)

Warbler, Marsh (*Sylvia palustris*, Bechst.; *Calamoherpe palustris*, Boie.).—Omitted in the 'Dictionary.' A specimen of this warbler was obtained in Cambridgeshire by the late James Hamilton, jun., of Minard, and was exhibited at a meeting of the Natural History Society of Glasgow, in February, 1865. As it had been submitted to Mr. Gould, there could be no mistake in identification. Very possibly this species may have been generally overlooked, owing to its resemblance to the reed warbler; Dr. Bree says, "I think I have myself taken the nest" (in England), "and Mr. Sweet's bird, mentioned by Mr. Yarrell, was probably of this species." (Bree, 'Birds of Europe,' ii. p. 74).

Warbler, Thrush-like.—('Dictionary,' p. 373). The unsatisfactory state of the history of this bird seems to be caused by the confusion of two perfectly distinct species, viz. the great sedge warbler (*Sylvia turdoides*, Meyer; *Calamoherpe arundinacea*, G. R. Gray), and the greater nightingale or thrush nightingale (*Sylvia philomela*, Bechst.; *Philomela turdoides*, Blyth). Both these birds seem to have occurred in Britain. Temminck's and probably Yarrell's birds belonged to the first-named species, while the Dartford specimen (Zool. 3476) would appear to have been the greater nightingale. Both species are said to have bred in Britain: Yarrell tells of a nest of the great sedge warbler taken near Dorking, and Mr. F. Bond informed Mr. A. G. More that he had seen eggs from Hertfordshire and Nottinghamshire ('Ibis,' 1865, p. 24). Morris states that eggs of the greater nightingale have been taken in Devonshire and Kent, but makes sad havoc of all nomenclature by describing both species under the same name, *Sylvia turdoides*; he also figures his "thrush nightingale" with a spotted breast. A good description of both birds and of their eggs appended to the 'Dictionary' might clear up much of this confusion.

Wren, Rubycrested (*Motacilla calendula*, Linn.; *Regulus calendula*, Licht.; *Ruby-crowned kinglet*, Bree).—Omitted in the 'Dictionary.' This pretty little American kinglet was killed on Loch Lomond, in 1852, by my friend Dr. Dewar, who subsequently presented the specimen to Mr. Gould. Mr. R. Gray, Secretary to the Natural History Society of Glasgow, communicated the fact to Dr. Bree, who has given all particulars in his 'Birds of Europe,' vol. ii. p. 109. The Rev. H. B. Tristram has

also received a specimen, *in the flesh*, which was killed in Branspeth Woods, Durham, also in 1852 (Bree, vol. ii. p. 114).—*Edward R. Alston*; September 10, 1866.

Destroyers of Birds' Eggs.—In an interesting note on this subject in the 'Zoo-logist' (S. S. 335), Mr. Jeffery has mentioned several depredators, but he has omitted one which is a constant destroyer of nests—the cat. Last year a robin's nest, which was built in an old rusty tin can that I had placed for the convenience of any small bird, was destroyed by a cat, and I believe the female bird caught. The eggs were nearly hatched, and might have been broken unintentionally and then eaten; the lining of the nest was pulled out. I have often seen cats hunt along hedges, peering upwards occasionally and sniffing. Mr. Jeffery accuses mice of being extensive robbers of nests; I should think that cats and weasels are more blameable. I and a friend once saw a rook flying about a gentleman's park with a large white egg in its bill; several other rooks were chasing it. The keepers hereabout catch magpies in steel traps baited with eggs.—*George Roberts*; *Lofthouse, Wakefield*.

Osprey and Golden Eagle in Aberdeenshire.—There was shot on the Links, and brought to me by Mr. Smith, an immature specimen of this bird, on September 11th, which weighed two pounds thirteen ounces. Extent five feet three inches. Length to the toes twenty inches and three-quarters; to the tail twenty-three inches. Upper mandible from the gape one inch and a half. Wing from the carpal joint nineteen inches and a quarter. Third quill the longest of the wing. It may not be unworthy of remark that portions of the down, although much faded and worn, adhered to the larger wing-coverts. An immature specimen of the golden eagle, shot also in the county of Aberdeen, in August last, and preserved by Mr. Mitchel, to whom I am indebted for an opportunity of examining it, had the down strong and fresh, adhering to the primaries, secondaries and tail-feathers. The comparative absence of the down on the osprey is doubtless to be attributed to the different habits of the birds. The stomach of the osprey contained nothing but fish, that of the golden eagle contained the greater part of a hare: the legs from the knee-joints had been swallowed whole, and some of the bones were remarkably large.—*W. Craike Angus*.

Osprey in Sussex.—An osprey was shot in the salt-water creeks, near the Bishopstone Tide Mill, Newhaven, on the 13th instant, and is now in the hands of Mr. Pratt, naturalist, Brighton, for the purpose of preserving.—*Charles Lang*, in the 'Field' of September 29, 1866.

Hobby near Rochester.—As the persevering extirpation of all birds of prey has made the hobby rather rare, the fact of three being seen together may be of interest: they resort every year to a wood near Rochester, which is only used as a fox-cover, where I observed them one day last August. Their cry is very shrill, unlike that of other hawks, though sometimes they utter a note like the kestrel's. They are extremely active and restless, continually chasing each other. There could be no doubt of the species, from the note and the length of the wings. They have seldom been shot at; I have only heard of one being killed: probably they breed there.—*Clifton*; *Cobham Hall, Kent*; October 4, 1866.

Stock Dove breeding in Kent.—As Mr. Power, in his account of the birds of Rainham (S. S. 123), expresses some doubt as to the breeding of the stock dove in Kent, permit me to say that they are very common in the woods here, building both in trees and rabbit-holes.—*Id.*

Pied Flycatcher in Sussex.—On the 18th of September I shot a female pied fly-

catcher (*Muscicapa atricapilla*), at Buckham Hill, Uckfield, Sussex. I killed it with a saloon-pistol, as it sat quietly near the top of an oak tree in the park. My repeated endeavours to find another of its species were fruitless; and I am quite unable to tell whether my bird was bred in the neighbourhood or migrating, but I should feel inclined to say the latter.—*Charles B. Wharton; Willesden, Middlesex, October, 1866.*

The Sky Lark.—Mr. Harting, as a Shakespearian enthusiast, teaches us that his author was a good ornithologist. I cannot forbear pointing out, as an ardent admirer of Milton, that he has subtly noted a characteristic of the sky lark, which, as far as I know, Shakespeare has been silent on—that is, its habit of singing in the night. I have heard it warbling high up in the air in the dead of a summer night. People do not generally give Milton the credit of being a good naturalist (spite of his matchless descriptions of the nightingale's song); perhaps when "outwatching the Bear with thrice great Hermes," or "unsphering the spirit of Plato" ('Penseroso,' 90), he had delighted

"To hear the lark begin his flight,
And singing startle the dull night,
From his watchtower in the skies,
Till the dappled dawn doth rise." (*L'Allegro*, 41.)

—*M. G. Watkins; Barnoldby-le-Beck Rectory.*

Late stay of Swifts.—It is singular that, after writing to you about a swift seen on the 3rd of September, I should have an opportunity of seeing one so many weeks later. Yesterday (Wednesday, September 26th) I went with a friend and neighbour to see the Flamborough Caves: we had just visited the light-house, and on our way back along the cliffs all our party (eleven in number) had seated themselves on the grass, at the head of one of the numerous small bays, and were looking out to sea from about the height of two hundred feet, when I observed one swift hawking about below us: the bird then came up to our level, and was more than once within very easy shot of us, with its face towards us, at less than thirty yards distance: there could be no possible mistake about it, and I studied it most carefully through my binocular, which I happened to have in my hand. My friend (Mr. Angas, of Beeford Grange) is a very intelligent and well-educated farmer, as well as sportsman, and we were all watching the bird for five minutes. The day was warm and pleasant; thermometer 59° as we passed by the public barometer in Flamborough village on our way to the Caves, and 62° when we came back.—*J. Gilbert White; Beeford, Hull.*

Food of the Wood Pigeon.—Having read the two communications in this month's 'Zoologist' (S. S. 456) relating to the food of the wood pigeon (commonly called "wood-guest" here), I also beg to be heard. I have shot wood pigeons at all seasons of the year, but particularly in the autumn, and have frequently examined the contents of their crops, and have never found anything in them that would prove that they injured the farmer, except in that season when the corn is ripe and turnip-tops are to be got. This autumn I shot between forty and fifty wood pigeons, and every one of them, almost without exception, had their crops full of corn: they were preying on the corn at the time that I shot them. It was as much as I could do to keep them off four fields of corn, for when fired at in one they would fly over to another. They go in flocks of from twenty to two thousand: I think I can say two thousand without hesitation, as I have seen an acre of ground rendered almost blue with them. They flatten down the corn with their strong wings, and then alight and feed. I have seen

a field of wheat dotted here and there with various flat patches, which they had flattened down, and in which places they had hardly left a grain. When the corn is stooked they alight on the top of the stooks, and do an immense quantity of damage. I have also seen a field of turnips greatly injured by them; they picked off all the green tops, and in some parts to such an extent that they rendered the roots almost bare. As far as concerns farmers in this neighbourhood, I consider a more destructive bird than the wood pigeon there could not be.—*R. M. Barrington; Fassaroe, Bray, Co. Wicklow, October 3, 1866.*

Gray Phalarope, Wood Sandpiper and Black Tern near Aldeburgh.—During the last few weeks I have made several good additions to my collection of birds, amongst which are several black terns; one only has a black breast: I shot this specimen in the Mere on the 9th of September: I procured three more on the 14th, and three again on the 19th: no more have appeared since, although many at that time passed along shore towards the south. On the 11th of September a friend killed two wood sandpipers (males): these are generally very rare birds in this locality: the note is very similar to that of the green sandpiper, but the flight and manner of those birds are very different: although feeding together in small flocks, as soon as disturbed they separate and soon alight again. I obtained two gray phalaropes, one on the 18th of September, and a second on the 19th, both males. I find they feed upon the larvæ of the drone-fly.—*W. Fenwick Hele, in the 'Field' of September 29, 1866.*

Gray Phalarope in Hackney Marshes.—I beg to inform you that a specimen of the gray phalarope has been sent to me to preserve: it was shot in Hackney Marshes on the 20th of September.—*B. Hesse; Alfred House, Chisenhale Road, Victoria Park, October 8, 1866.*

Gray Phalarope at Mayfield.—Two very good specimens of this rare bird have been shot recently at Mayfield; one on the 15th and the other on the 17th of September. A strong wind from the south and south-west had been blowing for some days previous.—*H. T. M. Kirby; Mayfield Vicarage, Sussex, September 19, 1866.*

Gray Phalarope at Eastbourne.—The gray phalarope has occurred in great numbers at Eastbourne, and neighbourhood. This beautiful little bird has lately visited our coast and "pals" (as the small ponds are called) in numbers, and "the cry is still they come." A friend living at Pevensey says there were great numbers there ten or twelve years since. From my notes I collect the following:—Friday, September 7. A coast-guardman shot two at Wallsend, Pevensey. 12th. Mr. Cooper shot one at the Crumble Pond; and Mr. Osbourne, farmer, shot one in a small pond close to the high road at Eastbourne, in company with some ducks. 16th. Bates, the naturalist, through whose hands all have passed, says, "Mr. Cooper brought me twelve phalaropes last night," which he shot that day at Cuckmere Haven. 17th. Mr. Cooper shot four at the Crumbles; Mr. Vidler shot one at Pevensey, and one on the 14th; a coast-guardman shot three at Pevensey; and one was shot to-day at Bexhill, in my presence. 20th. One picked up in the Marshes, which I have; Mr. Osbourne, of Eastdeane, shot two on the small pond in front of his house, in company with his ducks; Mr. Thomson has procured two at Cuckmere Haven; and Mr. Vidler has shot one at Pevensey.—*John Dutton; 51, Terminus Road, Eastbourne, Sussex, September 20, 1866.*

Gray Phalarope at Weston-super-Mare and at Budleigh Salterton.—On the evening of the 21st of September I had two birds brought to me to be named, which had been shot upon the Sands, not far from Weston-super-Mare. They proved to be the gray

phalarope, and were in a very pretty state of plumage intermediate between the summer and winter dress. I noticed the same thing in these phalaropes with respect to their autumn change which I had observed in many other birds, and this is that the great difference in plumage is effected not by the assumption of new feathers, but by the old feathers receiving new colouring matter. Thus, in the phalarope the distinguishing gray of the winter dress first shows itself at the base of the feather, and then extends gradually outwards, driving before it, as it were, the tints of the summer plumage. A very pretty effect was thus produced in the appearance of the birds when half way through their change. Traces of the summer dress were still apparent in the rufous edging of most of the feathers; while the season of the year was proclaimed by the broad patches of pure gray which already marked the feathers on the back and shoulders and crown of the head. One of the two birds I examined had the cheeks still of the delicate rufous tinge which characterizes the gray phalarope in its summer dress. Mr. Brodrick writes to me from Budleigh Salterton that *flocks* of this phalarope appeared on the shingly beach at that place during the middle of September. He noticed that the birds were in a weak and emaciated state. One which was brought to him had suffered itself to be caught by the hand, to such a state of weakness had starvation reduced it. It is a very unusual thing to find this phalarope in any numbers upon our coasts, even after severe weather; its occurrence, then, *in flocks* is a circumstance worthy of special notice. It is not often that more than a single example of the gray phalarope has been met with, or at the most a pair have been seen together: I remember, some years since, after a rough autumn gale, seeing as many as *six* together on the sands of the River Taw, in North Devon, and at the time considered that a very exceptional occurrence.—*M. A. Mathew; Weston-super-Mare, October 9, 1866.*

Gray Phalarope and Black Tern in Devon and Cornwall.—The late severe gales have driven an unusual number of gray phalaropes on the coasts of Devon and Cornwall. A few specimens of both old and young are to be met with almost every autumn on their return from the breeding-places; but within the last three weeks more than a dozen have been obtained in the neighbourhood of Plymouth alone, and some have been observed on inland ponds, swimming among the tame ducks. All the specimens examined by myself were much emaciated, and one specimen still retained many of the red feathers on the breast peculiar to the breeding season. The young of the black tern, too, have been plentiful this season, which I anticipated would be the case, considering the numbers of old birds which made their appearance on various parts of the English coasts during the spring.—*J. Gatcombe (Plymouth), in the 'Field' of September 29, 1866.*

Gray Phalarope in Dublin Bay.—From the 25th to the end of September the gray (why so called?) phalarope was frequently met with in the Bay. I am sorry to record five specimens shot: four were presented to me. In its ocean wildness I had good glimpses into the habits of the bird: its food I found to be a species of sea-louse, something like our wood-louse, which greedily preys on animal substances, as dead floating birds, &c., and is to be met with, with other species, amongst floating seaweed: the bird takes these both by swimming and by dropping on the water, also from sea-weed and the tidal portion of the coast. It swims light as a cork, gull-fashion, and incessantly keeps nodding the head; it also dives after its food for a distance of five or six feet. The flight of the bird resembles that of the sand lark species. Of man it

shows no fear, and will permit, I have been told, repeated shots. All individuals seen were in the autumn moult. The gray feathers of winter prevailed on the upper surface of any birds I handled, the under surface being pure white, except on the throat, where it is tinged with buff. Young birds predominated.—*Harry Blake-Knox; Dalkey, Co. Dublin, October 8, 1866.*

Red Lobefoot [Rednecked Phalarope] at Scilly.—I have seen a bird, in adult winter plumage, to-day, sent from Trescoë, Scilly, of this species: there is no brown or yellow tint on the under parts, which is the case in birds of the year, but an unsullied white throughout. Birds which in summer are red underneath and in winter white show, in young birds, in the first autumn at least, a buff tint of an intermediate character: this is in accordance with a very general law in the distribution of the colours of birds. Snow buntings have made their appearance.—*Edward Hearle Rodd; Penzance, October 6, 1866.*

Sabine's Gull in Mount's Bay.—A specimen of this little gull, which does not often turn up, occurred in our Bay a day or two since, and I hear that some others are about; it was exceedingly tame, and was knocked down with an oar. It is in the same state of plumage as the others which have been captured here, all of which have been in the autumn and in the immature plumage of young birds. The tail is deeply forked, with a broad black tip: independent of this feature, the comparative slenderness of the bill is a distinguishing character, when compared with *Larus minutus*.—*Id.; September 28, 1866.*

Ausonia Cuvieri captured off Falmouth. By THOMAS CORNISH, Esq.

ON Sunday, the 30th of September last, a fisherman at Falmouth saw a large fish floundering about in a pool left by the receding tide. He plunged in after it, and when in about three feet water he got hold of its tail, on which the beast made a spring and towed him under. However, he held on, and was towed about the pool, sometimes on his legs and sometimes under water, until he tired out his prize and beached it. It was a fish four feet long over all, 120 lbs. weight, bright crimson fins, steel-gray over the back, having a broad scarlet band along each side, and silvery belly. The sides appeared as if sprinkled with gold dust. I have not only seen the fish, but have secured it for our Museum here.

I have very little doubt indeed but that it is the *Ausonia Cuvieri*, a Mediterranean and tropical resident, of which only one specimen has ever before been taken in Great Britain, and that was one taken off the Dodman, in May last, and reported on by Mr. Jonathan Couch, of Polperro, in the 'Journal of the Zoological Society.'

I have examined it carefully, in the flesh, and as well (which I find to be most important) after its skin had been taken off, and also immediately after the setting of the skin in the process of stuffing.

Its measurements were:—

| | Ft. | In. |
|--|-----|-----------------|
| Over all | 4 | 2 |
| Eye to fork | 3 | 5 |
| Greatest depth, at two-thirds of the fin from origin of pectoral | 1 | 1 |
| Depth at origin of dorsal and anal fins (in the same plane) | 1 | 0 |
| Depth at the termination of same two fins (also in the same plane) | 0 | 2 $\frac{3}{4}$ |
| Length of the same two fins, measured along the fish . | 1 | 4 |
| Breadth at widest part (just where pectoral laid flat ended) | 0 | 8 |
| Span of caudal | 1 | 4 $\frac{1}{2}$ |
| Depth at origin of caudal | 0 | 1 $\frac{1}{2}$ |
| Breadth at same place (exclusive of the carination) . | 0 | 2 |
| Length of head (to extreme posterior of operculum) . | 0 | 10 |
| Anterior orbit of eye to gape | 0 | 3 |
| Diameter of eye (which was circular) | 0 | 1 $\frac{1}{2}$ |
| Posterior orbit of eye to extreme point of preoperculum (which lay from the eye downwards and backwards) | 0 | 2 $\frac{3}{4}$ |
| Posterior orbit of eye to extreme point of operculum 'which lay in line with the lowest edge of orbit of eye) | 0 | 5 $\frac{1}{2}$ |
| Perpendicular depth of head through pupil of eye . | 0 | 10 |
| On the same line, extreme upper ridge of head to upper part of orbit | 0 | 6 $\frac{1}{4}$ |
| (Eye 1 $\frac{1}{2}$ inch) | | |
| Lower edge of orbit to extreme ridge of the fish below it . | 0 | 2 $\frac{1}{4}$ |
| Gape | 0 | 1 $\frac{1}{2}$ |
| Perpendicular extension of mouth | 0 | 2 |

Give these measurements to any specimen of the "Scomber" family, and you will find that you have a fish constructed like a heavily built tunny up to the pectorals, and forward of that a fish with a remarkably heavy head and rounded profile. A most remarkable feature about the fish was the deficiency of fin-power. It had no fin of any strength at all corresponding to its size, except the caudal, and more than that, the other fins it had were all mainly aft, thus giving it of necessity slight powers of locomotion. The fish was evidently a slow beast.

The mouth was (as you will have seen) very small for so large a fish. It had no teeth, but merely incisive bony processes in place of them. The eye was in line with the mouth, and proportionately very large. Immediately over the eye, from the upper termination of the operculum, there extended forward and sloping a little upward a hard ridge, which, before the fish was skinned, appeared bony, but which turned out to be muscular, and which suggested the idea that possibly the fish, by contracting this into the upper portion of the head (which was soft and fleshy), was able to elevate or depress slightly at will the actual mouth part of it. The preoperculum was barely detached in

any part of it. The operculum lay close, but was detached throughout. The preoperculum and the operculum both ended a little above the level of the upper orbit of the eye. The pectoral fin had its origin immediately behind the upper part of the operculum, and consisted of fourteen fin-rays, of which all except the first were bifid. The first was a short spinous ray lying close to the others, and two and a quarter inches long. The second had for the termination of its first fork a detached spinous termination at a distance of seven inches from its base, and for the termination of its second a similar spine eight inches from the base, both closely tied down to the fin. The fifth fin-ray of this fin was the longest, and reached the length of ten and a half inches from the base.

Immediately above the termination of this fin, laid flat, there was upon the back a small fine spine, just over one inch in length and apparently free. I did not observe it before the fish was skinned, and I could afterwards find about it no trace that ever any part of a fin had been connected with it. I believe it to have been a free spine.

One inch behind this spine the dorsal fin had its origin. The first ray was a stout soft ray of upwards of six inches (I believe, from what I heard, it must have been originally nine inches, but it was broken when I first saw the fish) in length, and to which the fin was attached nearly half way up (assuming the length to have been nine inches). Next came two short spinous rays of about one and a half inch long, and then eleven soft rays longer than the spinous rays, and of which the ninth or tenth ray (these were damaged) was the longest, appearing to have been about two inches long. The fin terminated with the termination of the curve which preceded the straight base of the caudal.

The base of the caudal was broader than it was deep (see measurements above); and on each side of it was a very conspicuous fleshy horizontal carination, about three inches long and extending outwards about an inch; lozenge-shaped in every way.

The tail in shape resembled the tail of the tunny, and (omitting of course all count of obsolete rays) consisted of sixteen fin-rays. It was stout, and by far the most powerful fin which the fish possessed.

Taking now the under part of the fish, the vent was situated just under the origin of the pectorals, and was protected (as I found when the fish was laid out for stuffing) by a short stout spine about half an inch long. From observations made on the fish before I saw it, by your contributor Mr. E. H. Rodd, I have reason to believe that the vent was properly marked by two fleshy appendages, but unfortunately

the fish was roughly gutted before I saw it, and these have disappeared under the action of the knife. Almost immediately behind the vent there commences, as the lowest ridge of the belly, a bony process well covered by the skin, which extends backwards to the commencement of the anal fin.

There is no ventral fin, but just within the perpendicular line of the termination of the pectoral laid flat there is a fine spine, apparently free, smaller and shorter than the corresponding spine in the back. Two inches behind this the anal fin commences with a stout soft fin-ray of eight inches long, to which the fin clings for about half its length. It is followed by three or four (the last of them was damaged, and may have been spinous or a long soft ray) spinous rays (of which the one next the first or long ray is stouter than the first ray itself); and after these come ten (or as may be eleven) soft fin-rays, longer in their commencement than the spinous rays, and of which the eighth ray from the origin of the fin is the longest, being just two inches long.

The termination of this anal fin brings us near the tail and caudal fin, which have been already described.

In the course of preparing the fish for our Museum, it was ascertained that the bones of it were peculiarly soft. The back-bone was large, the ribs were slight, but all the bones were of a very soft nature. There were none (as I am informed) which could offer resistance to an ordinary knife.

Unfortunately, as I have said, the fish had been gutted before I saw it, and I could not therefore examine the intestines. But looking at the lumpish character of the fish, its small powers of locomotion, the situation of its vent, mouth and eyes, the size of the last, and the nature of its jaws, there is not, I suppose, much doubt that it is a bottom feeder on sea-weed.

The captors told me that the stuff, which they described as like gold dust, "rubbed off," but they showed some of it remaining, and there is still some remains of it to be seen under the pectoral fin. It appeared to my eye, unassisted, to be an extremely small scale, loosely attached to the skin: it felt like fine shell-sand. The colours have faded now to steel-gray on the back and belly, with a faint trace of crimson under the pectoral. It is to be much regretted that we cannot preserve the colours of fish in all their brilliancy, but still it is something to be able to preserve them at all, especially such strangers as this one.

THOMAS CORNISH.

Glances into the Ichthyology of the County Dublin.

By HARRY BLAKE-KNOX, Esq.

No. 1.

IF Ornithology and Entomology are badly worked out in Ireland, how very backward must our Ichthyology be? and so it is. Among our Irish naturalists we counted some true men in this Science, but they have passed away, and have left few disciples after them. Many book ichthyologists there may be, and some cabinet ones too, but there are very few of the real true hard-working teach-myself sort, who work the sea themselves, and do not trust to chance sea-shore waifs and market-stalls; yes, these are very few, and is it not a pity? Entomology and Ornithology have almost become bye-words, so greatly are they slandered; for any person who pins out a butterfly for its gaudy wings, now-a-days, is an "entomologist;" and the man who destroys the worn-out straggler, or boasts in these pages of killing without pity or remorse a flock of some rare bird, claims to be an "ornithologist." With the ichthyologist it is not so; he is almost invariably a man of science, or an ichthyologist in its true sense, and works out the fishes with a naturalist's right feelings. Few make collections of fishes except for scientific ends, because to the mere collector they are too "dirty" a subject, and lose all their gay colours when dead; spirits of wine, though simple, is too expensive and inconvenient, and besides to the eye—"naturalist" the fishes become par-boiled and lose their beauty. Stuffing is enormously expensive, unless the art lies in the collector, and who can stuff a fish? Very few; though I do know one whose powers this way are past belief (Mr. Thomas Cullen, of Trinity College, Dublin). Still no one can retain the beautiful life tints, so that specimens are no good to any one but the naturalist. To these reasons may be assigned the cause of so great an apathy on this subject, but still it should not be so. Fully convinced of its difficulties, still I predict that if I could meet with assistance from various parts of Ireland, Yarrell or Thompson would be no books of reference for the Irish ichthyologist in the future. I would therefore entreat that communications may be made to me by those who will not publish them themselves. I know that youth is despised by the scientific, and is often patronized by the men it could teach; so it is not self-opinionated age I would exhort, but the young

and the sanguine, for Nature, not Art, makes the naturalist—the practical knowledge, and not the book and museum. A man of twenty-five may have collected less and worked out more than him of eighty. Once more, in the name of a country whose seas are teeming with riches, I pray that communications may be made to the ‘Zoologist,’ and not merely buried among the musty archives of some local and unknown society.

NOTES OF 1866.

Jago's Goldsinny (*Crenilabrus rupestris*).—Counted by Thompson a scarce fish on our coasts, and critically mentioned by Yarrell; the goldsinny is notwithstanding an abundant fish on our coast. Fishing from the rocks for wrasse (Irish “brame”) is the time this species is most often taken; and, as this pursuit is only followed by children, Jago's goldsinny is but little known. Occasionally it is taken in the dredge, and by hand-lines when trying for the sea-bream (Irish carp). It will take many baits—crab, lug, the sea-mud centipedes and shell-fish. Being a very slow-taking fish it is seldom hooked till the more ravenous kinds have ceased to bite, and even then not often, from its frequent nibblings not getting time to take the hook, which is, generally speaking, far too large for its extremely small mouth. The more dazlingly bright and calm the day, the better to take the goldsinny. Many a day, at low water, have I fished for wrasse to feed my birds with, or perhaps merely to watch the bottom, with a line four or five feet below the surface, from one of our shell-covered granite rocks, and though the bottom would be strewn with beautiful things, yet nothing could be more beautiful than the changing colours of this lovely little fish. Slowly he would approach the bait, and with his sharp and fierce-looking teeth, chew it away by degrees till some smaller fish would drive him away for the time; but as soon as all seemed still he would come and chew away again till the hook was bare. The next bait might catch him, but often not at all. This chewing habit of the wrasses is generally thought to be sucking, the lips undoubtedly originating the opinion, but their frequent wringings and bitings when taking a bait would negative this opinion. Of their sucking powers I will speak again under another species. The maw of this fish generally contains broken shell-fish. The greatest length I have seen it in these waters is about six inches. The female is full of eggs in June. The flesh is bad, greenish and foul-smelling. Yarrell's description is good, but our fish is more often pink than golden, and

the lateral bands, I might say, almost always pretty distinct: his plate is bad, the head and body being too lumpy; neither does he trace the lateral bands, which I invariably find in life, and sometimes very marked. The four black or dark webs to the first four and a half spines of the dorsal fin and the black spot at the tail at all times indicate Jago's goldsinny. Its Dublin names are "pink brame," "two-spot brame" and "poisoned brame." The poor little goldsinny, luckily for itself, is cursed by the fishermen, and you will often hear the saying, "When you catch a poison brame, up lines and go home," meaning that the take is over for that tide, thus showing how timid and how slow of taking a bait it is.

Ponting, or Whiting, or Bib Pont (*Gadus luscus*).—Critically mentioned by Thompson, and said to be of "occasional occurrence;" is one of the commonest fish on this coast. In Kingstown Harbour its fry are often caught on a hook and line in scores. It is most commonly caught from three to four inches long, though I have seen and taken it four pounds weight; it then approaches closely, in figure, the sea-bream (*Pegallus centrodontus*). It takes best on a sunny afternoon at low water, when other fish refuse to bite, and refuses no bait. Yarrell says, "The bib or pont, though not abundant, is yet a well-known species, which is found on many parts of our coasts, particularly those that are rocky."

Threebearded Rockling (*Motella vulgaris*).—Thompson says, "Is found sparingly round the coast." On the coast of Dublin Bay this *Motella* is most abundant, and is caught chiefly on the conger-lines, taking a herring bait. When thus caught it is eagerly devoured by the conger. The largest congers I have ever taken were on these fish. It is not uncommon to get from ten to twenty on a line of three hundred hooks day after day. They take a bait with dreadful voracity. Their colours vary greatly from brown to brick-red. Yarrell's plate is magnificent. Its Irish name is "ronst dwrone." Among our Dalkey names is "slippery Jemmy," from the unctuous feel of the fish. The flesh is said to be delicate, but is not sold.

Salmon (*Salmo salar*).—Of course this fish is well distributed on this our east coast of Ireland. There is a small fishery on the Liffey. Among sportsmen and naturalists there is great uncertainty on what the salmon feeds. Whilst in the sea there is no doubt that it lives on small fish for one thing; this I have seen proved on many occasions, the last not one week ago (beginning of August), a gentleman catching one on a herring fry whilst reeling for mackerel. I have seen and

heard of many fish taken this way. Some years ago a lady hooked one, in the same manner, 18 lbs. weight, and had it landed (boated) with her parasol. Throughout the autumn salmon are constantly seen jumping after fry in the sea. Some Irish salmon attain enormous sizes; the largest I have ever seen weighed 76 lbs. 9 oz., though Thompson mentions one upwards of 80 lbs.: his notes are well worth reading.

Great Forkbearded Hake (*Phycis furcatus*).—"Has in a very few instances been taken on the N.E. coast."—*Thompson*, vol. iv. p. 187. Last winter two instances of this rare fish came under my notice, one from the stomach of a conger, the other trawled off the coast. They measured respectively 1 foot and 1 foot 5 inches. Yarrell's plate is very good.

Tadpole Hake (*Raniceps furcatus*).—"Has been taken on one occasion, as noticed by me in the 'Ann. Nat. Hist.' vol. ii."—*Thompson*. Occurs sparingly here in autumn and winter, and is not near so rare as the preceding. Is taken generally on spitted lines set for whiting, &c., near the rocks. Irish name, "pluck-a-shee." Yarrell's plate is admirable.

Muller's Topknot (*Rhombus hirtus*).—Saw one specimen taken last winter. Thompson also knew of its occurrence in these waters.

Whiff (*R. megastoma*).—Was rather plentiful last winter; I bought many very cheap to feed my birds with, because they were "bad soles."

Scald Fish (*R. arnoglossus*).—"A specimen of this very rare fish was obtained by Mr. Todhunter on the Galway coast, in September, 1848. * * * * It has been taken on the coast of Cork."—*R. Ball*. (*Thompson*, vol. iv.) Was trawled abundantly off this coast last winter and spring. Same remarks as the last. I saw some hundreds used for baiting crab-pots in the spring. The name is very appropriate.

Æquoreal Pipe-fish (*Syngnathus æquoreus*).—Last winter I met with an immense fish of this kind: seeing a boy "whacking" a donkey with a gutta-percha stick, as I thought, I asked him where he got it. "Its only a stalk of a snot (seaweed), sir; see:" and I did see a fine æquoreal, 3 feet 5 inches long. Of its toughness you may judge. Is not uncommonly taken in the baskets with whelks and crabs.

Shortnosed Sea-horse (*Hippocampus brevirostris*).—Dublin Bay is a pet locality of this curious species. Many were found dead among sea-weed last winter.

Thresher or Fox-shark (*Carcharias vulpes*).—"Can be announced only on circumstantial evidence as frequenting the Irish coast."—*Thompson*, vol. iv. p. 250. Is often very common in this Bay. Last winter I saw one rise and kill a wounded diver with a slap of its tail, and then swallow it. When rising in the water the thresher is known from the porpoise by its long dorsal fin. I have frequently given a thresher a charge of shot, and caused him to jump clean out of the water. When up for sport they make a great noise by striking the water with their tail. Have seen them of enormous sizes.

Blue Shark (*C. glaucus*).—Some examples were taken by me on conger-lines this year; the largest was over 6 feet long. I do not think it rare. They do great mischief to nets.

Tope or Blue Hornless Dog-fish (*Galeus vulgaris*).—I have taken this fish abundantly, ranging to 7 feet long. Yarrell is decidedly wrong in saying the tope is "almost smooth." Its skin is so rough that it scores wooden bowls and platters white, and makes fine burnishers for gun-barrels.

Angel-fish (*Squatina Angelus*).—According to *Thompson*, rare. I often meet it among rays and skates. Monsters sometimes are exhibited.

Torpedo (*Torpedo nobiliana*).—Is rarely taken now on this coast. Once I knew it frequently used to bait crab-pots. Last winter I saw one.

Myxine or Borer (*Myxine glutinosa*).—Only known to *Thompson* from being mentioned by M'Skimmin, in his 'History of Carrickfergus,' and by Mr. Templeton, in his 'Catalogue.' Cannot be rare off this coast, by the quantity of cod-fish which are consumed by it, the skin and bones being only left together. The poor dog-fish (picked or spiked species) are blamed for this. I have occasionally found them in the bilge of a boat.

Herring.—The food of this fish is considered obscure; in the summer, when they are very fat, their food is fry. In cutting up herrings for bait, and this summer in particular, I have taken quantities of the sand-eel and herring fry from their stomachs; also, on one or two occasions, the tinned hooks we use on our long lines. How they got these hooks I could never think, as they could not have broken the lines to have taken them off. They were a hook quite unknown to me. Any herring man can tell you that they eat their own fry. I believe the "suction" theory as much in the herring as I do in the salmon, the snipe, and the woodcock, and as I have often taken mud-

worms from the throat of the snipe, and have caught salmon with fish, flies and grubs (when a boy), I think I may be pardoned for doubting that it is by suction these creatures live.

HARRY BLAKE-KNOX.

Dalkey, Co. Dublin, August 11, 1866.

P.S. Since writing this paper I have found in several herrings small shrimps.—*H. B.-K.*

A large Specimen of the Broadnosed Eel.—On the 17th of August a very fine example of the broadnosed eel (*Anguilla latirostris*) passed into my hands for preservation: it was netted the day previously in the River Bure, at Horning. It weighed just $7\frac{1}{4}$ lbs., and measured 3 feet 8 inches in length from the tip of its nose to the tip of its tail, and 10 inches in girth (thickest part). This is the largest example of this species that I have ever seen or heard of. Mr. Yarrell, in his 'History of British Fishes' (vol. i. p. 299), observes that the greatest weight he had known an example of this species to attain did not exceed 5 lbs. The sharpnosed eel, however, has been known to attain a great size. Mr. Yarrell mentions two examples taken in a fen-dyke at Wisbeach, that together weighed 50 lbs, one 27 lbs. and the other 23 lbs. ('British Fishes,' vol. i. p. 294).—*T. E. Gunn*; 3, *West Pottergate, Norwich.*

Another Sturgeon off the Coast of Suffolk.—I have to record the capture of another example of this species, making the third this season taken around the coasts of Norfolk and Suffolk. This individual was captured on the 12th of September, by the crew of a Harwich fishing-smack, within a few miles from the shore. It was found to measure the extraordinary length of 12 feet 2 inches, girth 40 inches, and weight only 156 lbs. For notice of former specimen, see Zool. S. S. 311.—*Id.*

Variety of the Perch.—An example of the common perch (*Perca fluviatilis*), weighing $4\frac{1}{2}$ lbs., was caught in Ormesby Broad, near Great Yarmouth, on the 4th of September. Its entire length was 18 inches. The usually dark transverse bands of this species were very pale in this specimen; indeed they could scarcely be distinguished.—*Id.*

Notes on the Quadrupeds of Lanarkshire.

By EDWARD R. ALSTON, Esq.

(Continued from S. S. 242.)

Oared Shrew.—An adder or viper killed here in May last had a large swelling in the middle part of its body; on opening it I found in its stomach an oared shrew, quite whole and but little injured; the adder measured eighteen inches in length. This is the fourth specimen of this shrew which I have met with here: it appears to be more generally distributed in Scotland than *Sorex fodiens*. I cannot see any distinction

between the specimens described by Mr. Cordeaux (Zool. S. S. 327) and *S. remifer*; the general characters agree exactly and the dimensions do not greatly differ. Certainly his shrews could have been neither *S. tetragonurus* (our common species) nor *S. rusticus* of Jenyns, for neither of these belong to the aquatic section of the family (*Crossopus* of some authors), which his specimens evidently did. Of the last-named species (*S. rusticus*) I have never met with a description: if any of your readers have access to Mr. Jenyns' account perhaps they would favour us with his specific characters. The Leominster specimen, described by Mr. Newman (Zool. S. S. 386), would appear to be intermediate in some of its characters between the oared and water shrews. I believe that Mr. Jenyns has recorded similar specimens, and has expressed a doubt as to the distinctness of these two species.

Weasel.—Last winter a lad who worked in our garden saw one morning two weasels rolling over and over on the ground, seemingly in mortal combat. So engrossed were they that he succeeded in seizing one of them, when the other one, after gazing at him for a moment, flew at him and ran up his leg. The boy, naturally enough, dashed them both to the ground, and took to his heels. The above I have on thoroughly trustworthy authority, but whether the second weasel wished to rescue the prisoner, or meant to renew the conflict, I will not venture to guess. At any rate, the incident illustrates the boldness of these little beasts.

Bank Vole.—Another specimen, a female, was caught on the 21st of June, among some ornamental rock-work, where it had been feeding on a species of saxifrage. It contained four fœti, apparently just ready for birth, and was an unusually large example, the head and body 4.12 inch in length, the tail 1.75 inch. What is the usual number of young borne by the common field vole?

Squirrel.—On the 9th of October I saw a young squirrel, not more than three parts grown. It was singularly bold, and as I stood quite still it descended from the tree on which it was sitting, came within two yards of me, looked me all over, and then, apparently satisfied with the inspection, returned to its feast on fir-seeds. It showed the greatest dexterity in gathering the cones from the ends of the branches, frequently hanging under the bough, back downwards. In descending the perpendicular trunk, which it did with great rapidity, the hind feet were reversed, so that the claws might catch on the inequalities of the bark.

Wild White Cattle.—In my last "Notes" (Zool. S. S. 242) I mentioned the ravages of the cattle plague among the wild cattle at Cadzow. About one half of the herd survived, and the disease has long since disappeared.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, N. B.,
October 12, 1866.

Ornithological Notes from Lanarkshire.

By EDWARD R. ALSTON, Esq.

(Continued from S. S. 21).

Common Redstart.—On the 15th of August I saw a beautiful male of this species. This is the first redstart I ever saw here, although the species is not uncommon in some parts of Scotland. A few years ago a pair of birds bred in a garden at Hamilton, and were recorded in the 'Field' as the black redstart. On investigation, however, it proved that the figure by which they had been identified was wrongly named, and that the birds were of this species.

Willow Wren.—On the 26th of June I saw a willow wren's nest in a very unusual situation, namely, in a hole in a garden wall, nearly seven feet from the ground. The wall is covered on the top with turf, in a hollow beneath which the nest was placed: it was still further concealed from view by the topmost branches of an apple-tree which is trained against the wall.

Chaffinch.—On the evening of the 18th of June I observed a small bird running up the bare upright stem of a Scotch fir; on coming nearer I was surprised to find that it was a chaffinch. It afterwards performed the same feat on another tree, climbing the perpendicular trunk with as much apparent ease as a creeper. As it allowed me to approach within a few yards there could be no possible mistake as to the species; but surely climbing trees is not a common accomplishment in the finch tribe.

Roller.—A roller was killed near Glasgow in the beginning of October. Most unfortunately the skin fell a victim to the prevailing "plume mania," but I got the legs, still fresh and pliant, from Mr. M'Culloch, bird-stuffer, Sauchiehall Street.

Wood Pigeon.—With regard to the question as to the food of this bird, I am afraid there can be no doubt that, *where very numerous*, it does much mischief: I can fully corroborate Mr. Ranson's remarks

(S. S. 456) as to its feeding on all sorts of grain, and also destroying turnips by pecking holes in the bulbs, thus leaving them a prey to the first frost; it also feeds greedily on beans and peas. Here, where the ring dove only occurs in moderate numbers, it is comparatively harmless, but in the eastern counties of Scotland it flocks to the fields in prodigious numbers, and, as each bird devours quantities of the green or ripe corn, the mischief done is beyond question. I totally disclaim any predudice in the matter; at least any predudice *against* the defendant, for I have a strong feeling in favour of the persecuted animals in general, but the above I *know* to be facts. Whether the measures proposed by the Kelso Association (S. S. 310) will have any perceptible effects is very doubtful, for at least a portion of these huge flocks are certainly foreign visitors, probably from Scandinavia.

Woodcock.—I flushed the first woodcock seen this autumn on the 9th of October: it rose at my feet within fifty yards of the house, and flew with wearied and labouring flight. Jack snipe had been seen about a week before.

Dunlin.—I have this summer ascertained that the dunlin breeds annually in this neighbourhood, though in but small numbers. They seem to be very local, frequenting two or three parts of a moor near the borders of Ayrshire, about twenty miles from the coast, and at an elevation of more than a thousand feet above the sea-level. Last year a very intelligent and observant shepherd first told me of these birds; he called them "horse-cocks," a curious epithet, probably allied to "hoarse-gouk" or "horse-gawk," which Montagu gives as local names for the common snipe.* These dunlins leave this soon after the breeding-season is over. One shot on the 20th of June proved to be a male of last year: its gizzard contained remains of insects (principally small Coleoptera) and spiders, along with some small quartz-gravel. Is it not unusual for the dunlin to breed at such an altitude? Dr. Saxby says that in Shetland, in the breeding-season, "it is not often that they occur very high above the sea-level" (Zool. 9328).

Tufted Duck.—On the 8th of October three birds of this species, the first ever seen here, appeared on a small pond. One was shot by one of my brothers, and proved to be a female in good condition;

* Jamieson, in his 'Scottish Dictionary,' gives "hoarsgouk" as an Orkney name for the snipe, synonymous with the Swedish "horsgjök": he translates it "hoarse cuckoo," but it may also mean any "hoarse foolish bird." Perhaps the snipe and dunlin may have shared the dotterel's old reputation for folly.—E. R. A.

weight twenty-five ounces. The gizzard, which was very muscular, contained a quantity of fine quartz-gravel and some very minute fragments of aquatic insects. The intestine measured seventy-six and a half inches in length; at four inches above anus it gave off two "vermiform" cæca of unequal length, the right measuring six inches and the left five inches.

EDWARD R. ALSTON.

Stockbriggs, Lesmahagow, October 10, 1866.

Ornithological Notes from West Sussex.

By W. JEFFERY, jun., Esq.

JULY—SEPTEMBER. 1866.

Osprey.—An osprey was stated in the 'West Sussex Gazette,' to have been killed about three miles from Arundel Bridge, in the parish of Stoke, by Mr. William Slaughter: it had been seen about there for nearly a month, and "its prey while in this neighbourhood appears to have been bream, and its impetuous plunge into the river, and the rapidity, and unerring aim, of the bird in securing its prey, were frequently witnessed by those who have been in search of it." A second example was obtained near Newhaven, in the parish of Bishopstowe, in East Sussex, on the 14th of September.

Redbacked Shrike.—Saw a female of this species darting from a hedge and capturing humble bees, after the manner of a flycatcher.

Warblers.—Scattered individuals of chiffchaff, lesser whitethroat and sedge warbler seen at intervals to the end of September. The willow warbler and chiffchaff have a similar note, a "tweet" or "peep,"—I scarcely know which represents it best,—and this circumstance renders it still more difficult to distinguish the two species. The willow warbler and chiffchaff resemble each other much more closely than the wood warbler does either. Redstarts were numerous on the Downs about the middle of August, but scarce on the flat country. The common whitethroat appeared in increased numbers during the last few days in August, after a comparative absence.

Wagtails.—Ray's wagtail first observed passing south about the 12th of August. Pied wagtail seen in increased numbers early in August and up to the end of September. First saw the gray wagtail on the 28th of August, being a few days earlier than usual, but did not catch sight of it again until the 8th of September. Towards the end

of the latter month they became tolerably plentiful, but were never very numerous. I cannot pretend to say if these are *all* birds of the year, but they have not nearly so much yellow about them as we observe in specimens just before they leave us at the end of March, when the dark patch on the throat appears. Immediately below this patch at this season (March) is a semi-circular belt of bright yellow. In a skin which I have (dated March 22nd, 1866) it is clearly seen that this yellow belt is attained by a moult, the newest feathers looking like so many bright yellow (Yarrell termed it king's yellow) paint-brushes. The birds which visit us now have the chin and throat buff-coloured.

Tree and Meadow Pipit.—Tree pipits first noticed passing over on the 12th of August, and heard as late as the second week in September. Meadow pipits became more numerous about the third week in September.

Linnets in flock and missel thrushes congregate early in September. Ring ouzel returns September 19th.

Crossbill.—A solitary example of the crossbill was shot at Chidham on the 24th of July. The general plumage red, with a shade of yellow on the rump.

Sand Martin.—Observed to be very numerous about the 27th of August. I have seen more of these little Hirundines this autumn than usual: from the end of July until the end of September they have been seen almost every day. Here the question presents itself, where do they roost? House martins probably resort to their nests at night, while swallows repair each evening to some neighbouring willows or alders overhanging water, but I have never been able to find sand martins with them. If the latter return to their breeding-places every night they must travel a distance of not less than ten miles to the nearest sand-pit: I have frequently noticed that they retire earlier in the evening than either swallows or house martins.

Swift.—July 23rd. Saw a numerous party of swifts flying, in a south-westerly direction, high in the air, and uttering incessantly their usual squeaking cry. Last seen on the 17th of August.

Nightjar.—Put up a nightjar in a field of mangold-wurtzell, while partridge shooting, on the 3rd of September. Last seen on the 19th.

Waders.—Dunlins observed in flock by the end of July; some may have returned before this, but not being constantly in the neighbourhood of their haunts I have not been able to note down their return with accuracy. The same remark will apply to all my notes on the

coast birds. Sanderlings also observed to have returned at the same time: the gizzard of one dissected contained nothing but a few sandhoppers. The sanderling seems to prefer sandy shore to those parts in which either shingle or mud predominate. Whimbrel are seen in small parties, and an occasional gray plover. Common sandpiper numerous, and frequently seen flitting up and down the harbour at low tide, generally keeping in a line with the water's edge, unless when crossing from one side to the other, and often sending forth their pleasing little "teet-teet-teet." Green sandpiper first seen on the 9th of August. At the end of August the following birds were observed on the coast:—curlew, whimbrel, redshank, green and common sandpipers, greenshank, curlew sandpiper, knot and dunlin. An occasional curlew sandpiper has still some of the red feathers of the summer plumage remaining on the breast. Ringed plovers are here all the year: I found a young bird of this species, still in its plumage of down, on the 13th of August, no feathers appearing, and saw others which had not long flown. Do these birds ever rear two broods in the year? or are we to suppose, in these late cases, the first eggs or young have been destroyed? On the 9th of May, 1864, I found a nest of ringed plover's eggs, in this county, that would have been hatched in about a week: this shows a wide difference. I had a female ruff sent me from Sidlesham on the 8th, and a spotted redshank on the 26th of September. The last named had darker legs than I have before noticed in this species, from which I should take it be an older bird than those obtained before. Still the plumage was peculiar for an old bird, the upper parts being dark, but not so dark as in the full summer plumage, with an occasional light feather showing; yet these feathers are not so light as the winter plumage.

Moorhen.—The pair of moorhens alluded to (S. S. 226, 237) hatched a third brood of young on the 15th of July; thus, in a period of about eleven weeks, hatching three broods of young. This number I believe to be general when the eggs are not taken or destroyed. The third brood is frequently hatched later than the middle of July.

Gray Phalarope.—This district, as well as many other parts of the south coast, has been visited by unusual numbers of this handsome little bird: they first appeared about the 20th of September, and were observed both on the coast and about fresh-water ponds inland: a few have lingered till the end of the month, and those last killed have, in most cases, been very much emaciated. Nearly all that I examined were birds of the year, with the reddish tinge on the neck, in which

state of plumage they have frequently been mistaken for the rarer species, the true rednecked phalarope (*Phalaropus hyperboreus*): some have scarcely commenced changing to the usual winter garb of gray, but the under plumage of all that I saw was pure white. The gizzards of two which I dissected contained some very minute univalve shells, scarcely to be detected without the aid of the microscope; others somewhat larger, also some small serrated claws, about a line in length, apparently from some insect; small pieces of quartz and remains of sand-worms, mixed up with mud and small bits of seaweed. It would be well if our two species of phalarope were known as the "broadbilled" and the "narrowbilled." The bill is an infallible distinction, whereas the plumage may at times lead one into error.

Rednecked Grebe.—On the 13th of August I shot a grebe in Bosham Harbour, which I believe to belong to this species, though it is considerably smaller than any that I have seen before; in fact, it is intermediate in size between *Podiceps rubricollis* and *P. cornutus*, as the following measurements, taken before skinning, will show:—

| | | | | | | |
|--------------------|---|---|---|---|---|----------------------------|
| Length | . | . | . | . | . | 1 foot 3 inches. |
| Extent of wing | . | . | . | . | . | 2 feet $\frac{1}{4}$ inch. |
| Carpus to tip | . | . | . | . | . | $6\frac{1}{2}$ inches. |
| Tarsus | . | . | . | . | . | 2 " |
| Bill (from gape) | . | . | . | . | . | 1 inch 10 lines. |
| Bill (along ridge) | . | . | . | . | . | 1 " 5 " |

The neck is of a rich deep chestnut colour, but the gray patch on the throat of the adult *P. rubricollis* is wanting, the sides of the head and throat in this specimen being black and creamy white in alternate stripes, about a quarter of an inch wide, and running nearly parallel with the bill and eye.

Herring Gull.—The gizzard of a herring gull, which I shot on the 13th of August, was crammed with the small green crabs which are so numerous on our muddy harbours.

W. JEFFERY, JUN.

Ratham, Chichester, October 17, 1866.

Little Bittern at Colchester.—A fine specimen of this bird (*Botaurus minutus*) was shot on the 13th of August, just above North Bridge, Colchester, and has come into my collection. This is a very rare bird now in this county. I never heard of one being captured here before. The specimen is a female, in good plumage, like that of the male bird. There were two small eggs for next year in the ovarium.—*C. R. Bree*; Colchester.—From the 'Field' Newspaper of August 25, 1866.

Letters on Ornithology. By HARRY BLAKE-KNOX, Esq.

LETTER IV.—BRITISH LARIDÆ.

Subfamily RISSA.

Species LARUS TRIDACTYLUS.

A Natural History of the Kittiwake Gull, with an Account of all its Plumages and Transformations, from the Nestling to the Adult Bird.

“We shall here remark that too much caution cannot be observed with regard to this tribe of birds; none perhaps have puzzled the naturalist more, from the variation in plumage at different ages.”—MONTAGU, *Common Gull*.

Habits.—The kittiwake is one of our commonest east-coast gulls during spring, summer and autumn, and is to be met with also, though sparingly, throughout the winter. It generally arrives in our waters in flocks from the end of March, breeding in considerable numbers on the suitable islands of this coast, leaving again with the mackerel in October. In its habits it may be said to be strictly gregarious, though of course to be met with occasionally solitary. During summer and autumn it attends upon the shoals of fry, feeding greedily upon them when driven to the surface by their finny enemies, the mackerel, pollock, porpoise, &c.: at these times it may be strictly termed an ocean gull, rarely seeking the mainland shores like the other small gulls, the blackheaded and common gull. It feeds till very late in the evening, often being thus engaged at dusk, particularly in spring. In winter and in early spring its habits are not at all those of the kittiwake, for it will then seek the company of the other gulls, and frequent open harbours and the coast in search of floating substances of food thrown from vessels. I have always found it strictly a marine bird, never seeking fresh water or the land and its ploughed fields. It is mentioned in Thompson’s ‘Natural History of Ireland,’ that “One was filled with earth-worms and earth (this bird was killed when following the plough), and the bill of another contained some dry loamy earth;” and again, “The kittiwake being taken inland in the North has just been mentioned, and with respect to the county of Wexford we are told that it ‘sometimes wanders inland in search of worms.’” I consider this habit decidedly the exception, and not the rule, for the kittiwake even avoids the sea-strands of the County Dublin, and may well be called the ocean or rock gull. So gregarious is it in its habits that flocks of thousands associate and fish together, and during a “play” of

mackerel (these "plays" are caused by the mackerel driving the fry to the surface, when they follow and "rise" after them), or in a tideway where the fry are compelled to swim high, the din created by their cries whilst fishing is nearly deafening, and can be heard two or three miles off on a calm foggy morning. The skuas at these times are great interlopers; singling out a well-filled bird, they will separate him from the flock, and chase and bully him till he gives up what he has eaten. Perhaps none of the gulls have such a knack of gorging themselves as the kittiwake; it is consequently frequently found in flocks, lying lazily on the surface of the water, or if a barren rock is near the fishing-ground it is sure to be carpeted with this species at various times of the day—those times of the tide when the fry swim deepest. A very pretty sight it is to see a gray granite rock thickly studded with the little blue and white "mackerel-gull," and as the boat "closes" the rock, to see the living mass rise into the air, showing no fear of the boat, or perchance the deadly gunner, but passing and repassing at oar's length, with its strange jerking tern-like flight, above one's head, on this side and on that, looking down pryingly at you with its large, lustrous and soft dark eye, as it turns its head from side to side, and occasionally uttering its soft and plaintive "key—we—ah." Though the kittiwake is perhaps the least beautiful of this beautiful family, the tern-like beak and the short tarsi—the former taking from the head that beautifully innocent look of the other gulls—being to my eyes its ugliest points, it is notwithstanding one of the lovely though common little gems of the sea ornithologist; in fact, the summer sea would not be a summer sea without the kittiwake. In the stormiest weather, particularly during easterly gales in the winter, the kittiwake is one of the storm gulls, revelling, as it were, like the blackheaded gull, among the waves' whitest crests, and never coming towards the shore, as the large gulls do. During the breeding season the birds of last year and the two-year old birds associate in flocks, fishing and resting in the neighbourhood of the breeding birds, but never approaching the ledges on which the adults are breeding. Many observers have considered these two-year old birds to be barren adults, and a casual observer might fall into the error, but how an ornithologist could overlook the black bastard wing and the blackish or dark olive feet I cannot tell. The reason these immature birds frequent the situations of the adults at this season is, like everything in Nature, simple and for a purpose: the breeding-stations of the kittiwake are scrupulously chosen and selected for being in the immediate vicinity of the road—if I may use

the word—of the migratory fishes and their fry, and as the food of the one and two-year old birds is similar to that of the adult and young, *viz.* fry, they must consequently frequent the same localities; in other words, the track of the migratory fishes. In its disposition the kittiwake is extremely sociable, and apparently very affectionate to its kind. It is a most confiding and innocent creature, and, unhappily, fearless of its great enemy, man, who barbarously and wantonly, I am sorry to say, in many cases, shoots it by scores (for pleasure?), its affectionate habit of hovering and crying over its dead or wounded companions giving the murderer ample time to reload for its destruction; and then, with mutilated wing, it is taken into the boat, roughly thrown upon the dirty bottom, its beautiful symmetry destroyed, its snowy plumage soiled and bloody, agony depicted in its eyes, perhaps its existence mercifully ended by a rude kick or its brains dashed out against the boat, mayhap to die lingeringly in an urchin's hands, or perhaps favoured with a *chance* of life, to die helplessly—on the element it loved, and over which it flew, and on which it swam in health—of starvation, of exhaustion, or of cold. Poor innocent kittiwake! dear little friend!

Food.—Chiefly fry, though floating scraps of food and tallow are eaten for want of fish. No doubt the kittiwake may eat crustaceans, &c., when compelled by hunger, but living fry I consider its normal food.

Flight, Resting, Swimming: the uses of the short Tarsi and the Diver-like Feet.—The flight, strongly resembling that of the tern, is performed by a succession of quick jerking beats of the wings, not relieved by soars, generally flying slowly, though should a “play” rise at any distance from them they can make pretty good flying, but they have none of that eagle-like glide and sweep of the true gulls. They possess an extraordinary power of turning and twisting when the skua hunts them. When fishing they do not dangle (or rarely) the feet in the water like the other gulls, but dart on to its surface to take their prey, which may be some inches beneath: they do not strike the water with the force of the tern, but still they dart on to its surface unlike any other of the gulls: the short tarsi and the flexible toes are here of great service, quickly raising the bird again from the water by a stroke. The other gulls cannot do this on account of their long *wading* tarsi, so that they fish by dangling the feet in the water to balance and to prevent the body from touching it: when they do settle on the water they take some little time to rise and get into proper balance again;

consequently we see them, if they alight, taking a slight sweep before renewing their labours; not so the kittiwake, for, flying a foot or two above the water, he can dip and rise incessantly. The long tarsi and stiff feet of the wading gulls would materially inconvenience rather than assist them to rise from the water. Mother Nature has adapted every bird for its own manner of feeding, and had the wading gulls the short tarsi and the limber toes of the kittiwake, they would be incapable of wading and feeding on our bleak strands, which they so much help to enliven. The kittiwake also fishes when swimming: here again the strong tarsi and the diver-like feet give it strength and activity in its motions. On account of its pliable phalanges and their soft webs it is ill adapted for walking. It swims, like the other gulls, with the breast deepest and the tail elevated, the head carried crouched, and progresses by short side-to-side jerks, caused by the striking out of one foot at a time. Like everything else in Nature, the swimming of the gull is carried on in a beautiful manner: instead of the whole foot (tarsi and phalanges) being struck out, only the toes and their webs are used, the tarsi being held in such a slant that they give the least possible resistance to the water. When resting I invariably find it to select a barren rock on which to alight, lying on its breast or standing with the head crouched. In the stormiest weather it seems to prefer the sea to the land.

Cry.—When fishing its notes vary: “key—e,” “t—we—ah,” “t—we—ah—ak,” “anniē,” most probably denoting anger, disappointment and pleasure. When wounded I have heard it saying “me—are—ow” in a way that the oldest tom cat might envy. When hunted by the skua it screams in a very spiteful manner.

Nidification.—The kittiwake begins to nest early in May: the favourite situation of the nest is on the natural shelves of precipices and cliffs overhanging the sea, though it is often found in crevices and other suitable places on these cliffs. The accounts of authors, that the kittiwake selects certain elevations for its nest, I cannot concur in, for I have found it at all elevations, remote from as well as among guillemots, razorbills and puffins. Its nest is large, deep and compact, and built of sea-weeds, grasses and floating rubbish. The most eggs laid are three, which I consider the true number: when two are found I accuse some plunderer, such as the raven, of a theft. Their ground colour varies—olive-green of various shades, pale or yellow-brown and dingy white, spotted, blotched and occasionally streaked with brown, gray and purple. During the breeding season, as at all

other times, the kittiwake is a most sociable bird, thousands of nests being built touching each other side by side, and on such narrow shelves that, were it not for the living wall they form, the slightest gale would carry nest and all away. One can never judge of the quantities of kittiwakes that frequent a breeding-station, as they do not mind a shot, but still remain on their eggs.

Plumages.—I know no author that gives the plumages of this bird accurately. Our leading author, Macgillivray (decidedly the best), makes his bird in adult dress at a year old; Montagu and Yarrell only give the banded plumage of the first winter; I trace it immature in plumage till the third autumn moult. The plumage of male and female is similar: the males are larger than the females.

HARRY BLAKE-KNOX.

Dalkey, Co. Dublin.

(To be continued.)

Honey Buzzard at Scilly.—The Scilly steamer brought over yesterday a chocolate-coloured specimen of the honey buzzard, which I believe is the first recorded example of that species on the Islands. The chestnut tone of colour is uniform throughout the upper and lower surfaces of the body, and its general expression is that of being a bird of the year.—*Edward Hearle Rodd; Penzance, October 24, 1866.*

Variety? of the Burn Owl at Epping.—In December, 1864, a specimen of the barn owl (*Strix flammea*) was killed near this place, with the whole under parts tawny-yellow, spotted with black. The upper parts were more mottled with gray than usual: it was a large bird, and a female.—*Henry Doubleday; Epping, October 15, 1866.*

Late stay of the Lesser Whitethroat.—I shot a specimen of the lesser whitethroat (*Curruca garrula*, Brisson) on Saturday last, the 13th of October. I do not remember having seen one before so late in the autumn.—*Id.*

Snow Bunting at Beachy Head.—A young man shot a snow bunting at Beachy Head to-day, which he brought me. Bates has just brought me another, for inspection, shot out of a flock of five: it is very early for them to come south. Hooded crows have arrived some time since, and are abundant in our marshes and on the sea-shore.—*John Dutton; Eastbourne, October 8, 1866.*

Nest of the Siskin.—A friend and I in Aberdeenshire found a nest and eggs of the siskin, placed full forty feet above the ground, on the extremity of one of the top branches of a black fir tree; but our most careful endeavours to obtain them were unsuccessful: we sawed through the branch, but it was too heavy for us, and, slewing round, the eggs tumbled out and of course were smashed. There were three eggs in the nest, and the old birds were flying close around us during our operations, at times very closely imitating, we thought, the movements of the goldencrested regulus. The gamekeeper there told us that they breed regularly on the banks of the Dee, and we hope to take the eggs next season.—*J. A. Harvie Brown.*

Crossbills at Henley-on-Thames.—On the 12th of last August a flight of from forty to fifty crossbills (*Loxia curvirostra*) visited the grounds of Park Place, near here; they were seen about for two or three days, and then took their departure. The keeper, Mr. Hitchcock, shot three, but, his gun being loaded with large shot, they were so mutilated as to be quite unfit for mounting. They were in the intermediate or yellowish green state of plumage.—*Charles E. Stubbs; Post Office, Henley-on-Thames.*

Bee-eater in Jersey.—For the last ten days we had noticed a bird quite foreign to us, flying with the rapidity of a swallow, and poising at times with its tail extended like a hawk: its movements were very quick, and its gorgeous plumage in the sun came out very brilliant. Yesterday we had the good luck to shoot the bird. It is now being stuffed by Mr. Charlotte, birdstuffer.—*Jersey, October 13, 1866.—From the 'Field' Newspaper.*

Late stay of Martins.—A great many martins and some swallows are still here. I saw thirty or forty martins flying together this morning.—*Henry Doubleday; Epping, October 15, 1866.*

Swallow Stones.—I met last summer, in Brittany, with a curious fact relating to the habits of the common house swallow, which may interest some of your readers. In Brittany there exists a wide-spread belief among the peasantry that certain stones found in swallows' nests are sovereign cures for certain diseases of the eye. I think the same notion holds in many other parts of France, and also in some of our English counties. These stones are held in high estimation, and the happy possessor usually lets them on hire at a sous or so a day. Now I had the good fortune to see some of these "swallow-stones," and to examine them. I found them to be the hard polished calcareous opercula of some species of Turbo, and although their worn state precludes the idea of identifying the species, yet I am confident that they belong to no European Turbo. The largest I have seen was three-eighths of an inch long and one-fourth of an inch broad; one side is flat, or nearly so, and the other is convex, more or less so in different specimens. Their peculiar shape enables one to push them under the eye-lid across the eye-ball, and thus they remove any eye-lash or other foreign substance which may have got in one's eye; further than this they have no curing power: the peasants, however, believe they are omnipotent. The presence of these opercula in swallows' nests is very curious, and leads one to suppose that they must have been brought there from some distant shore in the swallow's stomach. If so they must have inhabited the poor bird for a considerable time, and proved a great nuisance to it. Some of your correspondents may perhaps find a better explanation of the above fact.—*G. A. Lebour; Fez Lodge, Addison Crescent, W., October 19, 1866.*

Late stay of the Swift.—A correspondent, writing from Southsea, says that great numbers of swifts collected in that neighbourhood during the first week in October, and principally took their departure in a south-westerly direction on Sunday, the 7th.—*Edward Newman.*

Whitebellied Swift in the Western Islands of Ireland.—I have mentioned the occurrence of this swift (Zool. S. S. 456) as at Achill Island; it should have been at Arran Island, off the Galway coast. This swift has also been observed at Achill.—*Harry Blake-Knox.*

Creamcoloured Courser at Sandwich.—A specimen of this very rare bird was shot near Sandwich, by a man who knew nothing about its rarity, and allowed it to spoil:

when it got into my hands it was nearly rotten.—*H. J. Harding*; 131, *Lower Street, Deal*, October 10, 1866.

Glossy Ibis at Scilly.—A bird of the year of the ibis was shot on one of the Scilly Isles last Monday: it is a smaller bird than the specimen killed there twelve years ago, which we put down as a two-year old. I examined the present specimen yesterday, after it was skinned, but I am told it was in full flesh: the whole of the under parts are dull smoke-brown; the chin and neck have some of the feathers bordered with white; the upper parts lapwing-green. The middle claw is serrated.—*Edward Hearle Rodd*; *Penzance*, October 13, 1866.

Glossy Ibis at Budleigh Salterton.—I was to-day in the shop of Mr. Truscott, bird-stuffer, in Exeter, and there saw a specimen of the glossy ibis, which had been shot on the 11th, at the mouth of the River Otter, at Budleigh Salterton. It is a young bird in the plumage of its first autumn.—*Murray A. Mathew*; October 15, 1866.

The Stork at Cork.—A stork was killed near Hop Island, on the Lee, by the engine-driver of the Cork and Passage Railway, on the 7th of August. It weighed 8 lbs.—*William Ashton Harkett*, in the '*Field*' Newspaper.

Ruff near Grangemouth.—A second specimen of the ruff was shot close to Grangemouth, on the 24th of September, by my friend Mr. J. H. Belfrage. It was a bird of the year, and a small specimen. Immediately after the bird was secured the gloss and oily smoothness of the feathers on the back was very beautiful, but two hours afterwards this was entirely gone. It was flying in company with a flock of dunlins when it was shot, and both Mr. Belfrage and myself were struck by the unusual brightness of its plumage as it flew past, approaching to the yellowish tinge of the golden plover. This specimen very much resembled the buffbreasted sandpiper. The former specimen which I mentioned as killed in the same locality (Zool. 9118) was nearly double the size of this one.—*J. A. Harvie Brown*.

Wood Sandpiper in Aberdeenshire.—On the 1st of September I flushed a flock of sandpipers at Donmouth. At one of the birds, which was different from and more conspicuous than the others, having the rump white, I fired a snap-shot, but with apparently no other result than causing the bird to separate from its companions: it flew by the coast-line southward. On my way home, passing the largest pool on the Links, near the Cow Hillock, my dog sprang what appeared to be the same bird hanging one of its legs. Another shot, and I was in possession of a wood sandpiper, a bird of the year. The bird on the wing was very much like the young of the curlew sandpiper, for which I mistook it. Except in England, so far as I am aware, there is no authentic record of the occurrence of the wood sandpiper in this country. Mr. Morris (*vide* '*British Birds*'), in reference to this species affirms that in Ireland "a pair were noticed several years in succession at Glenbour." But Mr. Thompson, who is remarkable for his accuracy, and from whom Mr. Morris evidently borrows the statement, considers the occurrence of this species in Ireland as doubtful. "In Scotland," Mr. Morris continues, "the eggs are *said* to have been procured in Elginshire." I have been at some trouble to have this *saying* verified, but have failed. As the wood sandpiper is new to the Fauna of Scotland, and one of the rarest of the British birds, a short description of the specimen referred to may not be uninteresting to some of the readers of the '*Zoologist*':—Sex female. Weight nearly two ounces and a quarter. Length from the beak to the tail eight inches and a half; to the toes ten inches and three-quarters. Wing from carpus four inches and five-eighths; extent fourteen inches. Upper

mandible, which is longer than the under mandible and hooked at the tip, one inch and a quarter from the gap. Crown of the head dark brown. Above the eye, from the beak to the back of the head, a white line, dotted with brown. From the beak to the eye, which is dusky, a dark brown streak. Chin white, delicately spotted with light brown. Throat and breast light brown, mixed with white, the feathers being brown for three-fourths of their length and barred with dirty white. Vent and rump white. Sides and lower wing-coverts brown, irregularly barred with white. Primaries darker above than below; the first, which has the shaft dirty white, is the longest in the wing. Upper parts darker than in the adult, spotted with black and brownish white. All the tail-feathers white, irregularly barred with dusky brown on both webs, those in the centre being the darkest. The stomach contained a quantity of vegetable matter and a number of seeds. The specimen was prepared by Mr. Mitchell, of the Aberdeen Museum. On the 17th of January, 1863, I received a male of this species that was shot on the banks of the Yohan, opposite the mansion-house of Auchmacoy.
—*W. Craike Angus.*

Gray Phalarope at Eastbourne, &c.—The last of the phalaropes procured here are as follows:—Friday, September 21st. Mr. Vidler shot one, and a coast-guardman has procured another to-day at Wallsand, and one at the Crumble Pond: five or six were seen at Seaford (West). 22nd. A coast-guardman shot one at Wallsand. 25th. Mr. Bates shot five at Cuckmere Haven. 29th. Two seen at the Brickfield Ponds; and two were shot, about the middle of September, at Mayfield (Mayfield Magazine); none have been seen since the 4th of October. Mr. Gasson, naturalist, of Rye, says, "Very many gray phalaropes have been shot during last month (September). I never saw them so plentiful, nor have I had more than six pass through my hands in twenty years before." Mr. Kent (St. Leonards, September 26th) says, "Fourteen phalaropes have been shot between Rye and Pevensey during the last fortnight." The conclusion I come to about them is this, that a very great flight has visited our south coast during September; that the direction has been from east to west, the first having been procured at Bexhill and Pevensey, on the east of Eastbourne; that they were very thin, emaciated and flabby, and bore the marks of having alighted from a long flight. They were remarkably tame: a coast-guardman told me that his boys threw stones at them without their attempting to fly, and that they allowed him to load his gun again after having fired, without their moving off. The food found in their stomachs consisted of flies, small worms and water insects. They were always seen swimming in a most graceful manner, with the tail raised, and darting their heads backwards and forwards with a very quick motion to catch the flies and other insects.—*John Dutton*; 51, *Terminus Road, Eastbourne, October 16, 1866.*

Egyptian Geese at Stockton-on-Tees.—A flock of Egyptian geese (*Anser aegyptiacus*) appeared here yesterday, and five were obtained by the duck-shooters. The birds were all in fine plumage.—*H. B. Tristram*; *Greatham Vicarage, Stockton-on-Tees, October 27, 1866.*

Nesting of the Blackthroated Diver.—I got the eggs this season of the blackthroated diver (two nests) from Sutherland, and when there in August I saw three or four different pairs of birds in full summer plumage.—*J. A. Harvie Brown.*

The Black Tern near Aberdeen.—An immature specimen of this bird was shot by Mr. James Giles, the celebrated painter, in the early part of the present month, in the estuary of the Yohan. The bird was alone, and observed by Mr. Giles

Y. H. H.

the day previous to that on which it was shot. The peculiarity of its flight attracted his attention. This species breeds in England and Ireland, but has never been known to do so in Scotland: although it has been observed in Berwickshire, Forfarshire and Banffshire, I am not aware of its having been previously procured in Aberdeenshire.—*W. Craike Angus*; 130, *Union Street, Aberdeen, October 23, 1866.*

Occurrence of Sabine's Gull in Dublin Bay.—On the 28th of September Mr. Walter Atkin, of Dalkey, shot—almost in company with a gray phalarope—an example of this arctic gull. It is a young bird, in first plumage, and similar to the one shot by me in 1861 (Zool. 8093). This makes the fourth one known to have occurred in Dublin Bay, and the sixth in Ireland—all in the same stage of plumage. The following description was taken from the bird in the flesh:—Forehead, space before eye and a little above eye white; a spot immediately before eye and on the eyelid black; head smoky lead-colour; fringes pale brown; neck, back and shoulders the same, but that the feathers of the back and shoulders have a blackish bar before the fringe, which varies from wood-brown to whitish. The scapulars or tertial coverts and the tertials themselves are of the same character, but have a creamy light after the dark band. Tail-coverts, throat and all under parts white; tail white, deeply banded with black. Marginal wing-coverts take after the neck. Lesser secondary coverts, some of the elbow-quills and their coverts as the tertials. Greater coverts of secondaries lead-colour; deep, white tips; towards the carpus the white increases and runs through the whole, giving them a white clouded with gray appearance. Primary coverts next carpus black and white; rest black. Primary quills: first five centre filaments and shafts black; inner filaments black, broadly banded with whitish gray to an inch or so of the tip, distance increasing downwards, extreme end dull white; sixth, tip white, lesser filament black, about half an inch from tip there is a white spot to the fringe, but not to the shaft; the greater filament whitish, about an inch from tip along the shaft is clouded with black—as I stated in my former account (Zool. 8093) this quill varies; seventh, end half white, rest of lesser filament smoke-colour, rest of greater filament smoke-colour tinged with white, shaft white; eighth white, tinged about its centre with gray; the rest and the secondaries white. Bill thick for its length, gull-shaped and dusky. Feet flesh-colour. Expanse two feet seven inches; carpal joint to end of quill-point ten inches and a quarter; carpal to elbow three inches and three-quarters; length to end of outer tail-quill one foot one inch; depth of fork in tail one inch; bill along top three-quarters of an inch; bill along gape one inch and one-twelfth; tarsus one inch and a quarter; middle toe one inch; nail one and a half twelfths of an inch. Very little was observed of the habits of the bird, except that it showed no fear of man or fire-arms: it was shot swimming, after many shots had been fired at the phalarope.—*Harry Blake-Knox*; *Dalkey, County Dublin, October 8, 1866.*

Little Gull at Bridlington Quay.—I was fortunate enough to shoot a specimen of the little gull (*Larus minutus*), at Bridlington Quay, on the 9th of August.—*G. D. Armitage*; *Milns Bridge House, Huddersfield, Yorkshire.*—From the '*Field*' Newspaper.

Shearwater at Epping.—A specimen of the shearwater (*Puffinus Anglorum*), in beautiful plumage, was picked up dead in a garden in this town, on the 21st of September: it was very fat.—*Henry Doubleday*; *Epping, October 15, 1866.*

Rare Birds near Kingsbridge.—Some rare birds have occurred in this immediate neighbourhood: in September, 1865, I shot on our estuary a white specimen of the

knot; and in October a pair of longtailed ducks, the male having the very long tail-feathers and all the appearance of a full dress bird: in November a male of the great northern diver and a male of the blackthroated diver; these birds have all the beautiful markings of the mature birds. In April, 1866, a pair of black terns was also shot on the estuary; in May a full dress male of the redthroated diver, in adult plumage, was captured—the bird appeared incapable of flight; on the 19th of September a flock of about fifty phalaropes made their appearance on the Thurlston Ley, several of which I shot: they appear to have been driven on this coast by the south-easterly winds.—*Henry Nicholls, jun.; Kingsbridge, South Devon, October 24, 1866.*

Lizards devouring their own Species.—I am sorry to say that I am ignorant enough not to know if it is a common thing for lizards to kill and eat others of their own species, and I have no books at hand to consult; but during six years' residence in various parts of India I have never seen a case of it until the present time, although my servants say that both snakes and lizards are in the habit of doing so. Last night, while sitting at dinner, I heard a slight flapping noise behind me, and on looking round I saw a lizard on the wall, with a smaller one of the same sort in his mouth. He had got it firmly by the head, and was dashing its body against the wall at intervals of a few moments. This went on for about five minutes, during which time the victim was writhing and kicking most violently. I then saw that he was beginning to swallow it, and in about five minutes more only about an inch of the tail was left visible; he then took alarm and ran away a few feet. I was anxious to examine the captor, and cut him across the back with a whip. He dropped on the floor, but got up again, and managed to get through a door into another room. He was about five inches long and the victim about two inches and a half long; but the latter was very thin indeed, while the other was very large and stout for his length. They were both of the species found in houses, more or less, all through India. Their food is, generally speaking, flies and mosquitoes, but I have seen them kill and eat very large spiders and insects of the grasshopper tribe.—*Francis Eagle; 41st (the Welch) Light Regiment, Agra.*—*From the 'Field' Newspaper.*

Rare Crabs at Penzance.—I took yesterday the minute porcelain crab (*Portunus longicornis*), two specimens; the scaly galathea (*Galathea squamifera*); the circle-fronted swimming crab (*Portunus arcuatus*), seventeen specimens of all sizes. These were all taken in about seven fathoms water, after several days' heavy weather. It is remarkable of *P. arcuatus* that I had a similar catch of this crab (which is rare here) in October, 1865, and I had a single specimen shortly afterwards in the same month. These three occasions are the only times at which I have taken this crab.—*Thomas Cornish; Penzance, October 19, 1866.*

Ravages of White Ants.—In a report of a late Meeting of the Entomological Society, there is an account of the ravages of the white ant in St. Helena, by Mr. Edgar Layard, who asked for information, and as the experience of one who has lived in a country more or less infested throughout its whole extent by these destructive insects may be useful, I venture to supply one or two hints. As to the walls, mixing

common arsenic in the mortar has been found effective in this country (India). With respect to the roofs and floors, double T-headed iron beams are replacing wooden ones; iron also being used for what are, I believe, called the bridging joists (burgahs is the word used here), and one house has been built in Calcutta without a beam in it, the floors and roof being rather flat masonry arches. As to the woodwork, generally, let me direct attention to Dr. Boucherie's patent for impregnating wood with sulphate of copper, which would, I believe, be very useful. The process is simple and cheap. It consists of forcing, by atmospheric pressure, a solution of sulphate of copper (6 of the sulphate to 100 of water) through the pores of the wood, replacing the sap. It has also the advantage of rendering some cheaper woods available for building purposes. As to book-cases, pier tables, &c., flat circular pieces of copper sheeting, about six inches in diameter, placed under the feet of the book-cases, I have always found effective. The white ants will not walk over copper, because, as I have heard it said, of the action of formic acid on the metal. They will, however, not only burrow up the unprotected feet of book-cases, but will also bridge over the distance from the wall, and erect tubular columns by which to ascend from the floor. It might therefore be expedient in St. Helena to cover the floor underneath the book-shelves, and also to back them completely with sheet copper. I may add, that white ants will not willingly attack teak wood. Some short time ago they ascended from the floor by a hollow tube to the bottom of a chest of drawers, but they gave up the attempt when, as I fancy, they found that the wood was teak. I can hardly hope that these hints will be very useful to one so experienced as Mr. Edgar Layard, but they may be of some service to others.—*Morris Beaufort; Bengal Civil Service, Chittagong.—From the 'Field' Newspaper.*

Dermestes lardarius attacking Birds' Skins.—Herewith I send a small beetle and several skins of its larvæ. Its history is as follows:—On the 28th of last May I skinned and mounted a specimen of the redshank, dressing the skin with a composition of soap, lime, alum and camphor, in the proportion of one ounce of the last three ingredients to one pound of the soap. I ought perhaps to mention that the skin was a very greasy one, the bird being so fat. About a week or ten days after this I found that the specimen was being destroyed by some insect, and I also found several of the larvæ cases underneath the bird. To destroy these insects I baked the specimen in a slow oven for an hour or two, and this had the desired effect. One of the larvæ, however, dropped from the bird, and this I carefully saved, intending to try and find what it would come to. I used occasionally to drop in a fly or something of the sort for it to feed on, until it turned to a sort of white chrysalis; in this state it remained for a week or two: on looking into the box this morning, instead of the chrysalis, I found the enclosed beetle: probably you will at once recognise it.—*W. Jeffery, jun.; Ratham, Chichester, October 20, 1866.*

[The beetle is *Dermestes lardarius*, commonly known throughout the country as the "bacon bug": it is exceedingly destructive to bacon, hides, birds' skins and every kind of animal matter stored in warehouses. In the preservation of the skins of birds or animals for the museum the arsenical soap alone should be used; its qualities have been thoroughly proved, whereas the numerous modern recipes have not been tested by practice, and therefore had better be avoided.—*Edward Newman.*]

